

Scottish Education Department
Pupils who are defective in vision

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AMERICAN FOUNDATION
FOR THE BLIND INC.



SCOTTISH EDUCATION DEPARTMENT

PUPILS WHO ARE DEFECTIVE IN VISION

A Report of the Advisory
Council on Education
in Scotland

*Presented by the Secretary of State for Scotland to Parliament
by Command of His Majesty*

EDINBURGH
HIS MAJESTY'S STATIONERY OFFICE : 1950

Price 1s. 3d. Net

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PREFATORY NOTE

THE following Report on Pupils who are Defective in Vision, submitted to the Secretary of State by the Advisory Council on Education in Scotland, is published in order that it may be available to all who are interested. The recommendations in the Report have still to be considered by the Secretary of State, and in the meantime he should not be regarded as in any way committed to accepting them.

J. Mackay Thomson ./.

10th November, 1949.

PREVIOUS REPORT

The following report of the Advisory Council on Education in Scotland, as reconstituted on 1st January, 1947, has also been published :

PUPILS WHO ARE DEFECTIVE IN HEARING.

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REPORT

*To the Right Hon. Arthur Woodburn, M.P.,
Secretary of State for Scotland.*

Sir,

INTRODUCTION

1. On 9th January, 1947, the Secretary of State remitted to the Advisory Council—"To review the provision made in Scotland for the primary and secondary education of pupils who suffer from disability of mind or body or from maladjustment due to social handicaps, and to make recommendations." In view of the large field which this remit covers, we decided that one Report should be divided into separate and self-contained parts and that each part should be submitted to the Secretary of State as it is ready. We have already submitted a part dealing with the provision for the primary and secondary education of pupils who are defective in hearing, and this part is concerned with similar provision for pupils who are defective in vision.

2. In the Appendix will be found a list of the bodies and individuals who assisted the Council in their inquiry. We desire to place on record our appreciation of the valuable help we received from these sources and also from the personal contacts which we made in the course of our visits to the schools named in the Appendix. On these visits we were received with cordiality and with every courtesy and were granted the fullest facilities.

PART I

THE BLIND AND THE PARTIALLY SIGHTED

CHAPTER 1

THE NATURE OF THE PROBLEM

1. Vision

3. Nightfall brings to the sighted an ever recurring reminder of the problems of the blind. Colours are drained from the world by every twilight; shapes assume an unfamiliar vagueness; movements become mere hints of change in the surroundings. These experiences are interpreted by normal people, no matter how devoid of vision they may be, in the light of visual memories. They convey only a feeble impression of the world of the blind, but they are sufficient to prompt a concern for those whose days are in perpetual darkness. The blind attract the sympathy of the normal person more readily than do the deaf, for it requires imagination to appreciate the mental life of the deaf who live in a world that is unfamiliar to ordinary people. The blind do not suffer the estrangement of the deaf. In speech and hearing they are like their fellows, and therefore remain in communion with them. But sympathy for the blind is not to be attributed to ease in imagining their plight or to sense of kinship with them. They appeal, and their appeal is heeded because their needs are great.

4. In common speech the words most frequently used for understanding are related to sight. To "see" is to obtain meaning. The most penetrating knowledge is called "insight." It is no accident that the vocabulary of comprehension is derived in great part from vision, for it is through sight that much of our understanding is attained. Most of the practical activities of daily life depend upon seeing. The simple movements of walking and running are guided by visual perception ; the erect posture of a healthy sighted man or woman depends largely on the advantageous seeing position that erectness confers ; avoidance of common dangers depends more on sight than on any other sense. In interpreting the behaviour of others the testimony of the eyes is not less important than the hearing of spoken words. Sighted people appreciate subtleties of gesture and facial expression ; they use these clues in interpreting the minds of those with whom they converse. The shapes that are most familiar often reach awareness through touch but they are more frequently apprehended as the furniture of the visible world. The printed word and the visual sign are constantly offering advice or command, but they speak in vain to the blind. In countless ways human activities rely on sight, and it follows that those who lack the guidance of this sense readily arouse sympathy and the compassion that issues in active care.

2. Vision in Schools

5. Educational experiences are largely visual. The formal study of reading and writing proceeds from the visual stimulus of the printed word ; arithmetic begins with the counting of objects discriminated by sight and continues by constant use of reading and writing ; history and geography, music and the arts, nature study and physical education use methods that depend in varying degrees on the possession of sight.

6. Many developments in methods and curricula tend to increase the traditional reliance on vision. A new place has been given to visual aids in primary and secondary education. Learning by doing has increased while learning by hearing has diminished. The new interest in technical education in adolescence has made new demands on sight. Primary classes have to some extent adopted group and individual methods of instruction and in these the word of command tends to come not from the teacher's voice alone but from the printed assignment, the book, the card of instructions. Methods of oral instruction will doubtless continue to be employed, but they are no longer unrivalled and their new competitors are visual in character.

7. The increased emphasis on the use of vision in education raises questions concerning the education of those whose sight is impaired. Can children who are thus afflicted profit from ordinary schooling ? What degree of impairment makes it impossible for a child to have the same educative experiences as those who are not thus handicapped ? How can children so handicapped be given a compensatory education ? By what means may their minds be stimulated if they have no ready access to print ? Each new development in visual aids, each new emphasis on sight, has as its corollary a new concern for those who cannot profit from the new device or the new method. If this corollary be not accepted, the handicap of nature is magnified by educational inequality.

8. While it is important to think of children with impaired vision as deviates from the normal and to be concerned with their lacks and deficiencies, it is even more important to consider them as persons with their own needs and interests. The problems of blind children are not solved when by clever devices and skilful methods they are enabled to undertake most of the work of formal education that

is done by sighted children. The blind and many of those who have less serious impairment of vision have problems that are peculiar to themselves. Their social needs, their most natural behaviour patterns, their satisfactions have a disposition and colour that are significantly different from those of sighted children. They require then not an education borrowed from the sighted and modified by their deficiencies, but an education that is designed to meet their needs and to prepare them for a full and harmonious life.

3. Two Main Groups ; Blind and Partially Sighted

9. It is sometimes assumed that people can be divided into two discrete groups, the blind and the seeing. This assumption is erroneous. There are people who are entirely blind and people who have normal vision, but between these two there are many gradations. Some have the merest perception of light and are unable to discriminate objects ; they are for all practical purposes blind. Many have a degree of impairment that can be adequately corrected by glasses, and they can take their place in school and life on equality with those who have normal vision. Some have vision enough to place them outside the category of the blind both in occupation and in education, but their vision even when corrected as fully as possible does not allow them the range of experience in school or in industry that is available to those whose vision is normal. It follows that education for children with defective vision must provide for three groups. The first group consists of those who with correction can be placed in the same category as pupils with normal vision. The second group consists of the blind and those who while having some perception of light are so lacking in visual discrimination that they require to be educated by methods appropriate to the blind. The third group is most difficult of all to determine and to serve. It includes children who while not being so deficient in vision as to require methods appropriate to the blind have not sufficient sight to enable them to profit from ordinary schooling, those who have vision that is rapidly deteriorating, and also those children whose vision would deteriorate if they were subjected to the visual strains of normal education. Those in this group are usually described as "partially sighted." The term is well chosen in that it emphasises their possession of vision and implies that they should be educated by visual rather than by non-visual methods.

10. This Report is not concerned with children whose vision is so nearly normal that they can with suitable correction, remain in ordinary classes in ordinary schools. The needs of such children are adequately met, provided that their spectacles are used when required, are kept clean and are correctly placed in relation to the eyes. Teachers should make certain that these conditions are fully met by all children who use spectacles. The main problems centre in the blind and the partially sighted. In dealing with those two broad classes within the same Report, no suggestion is made that the educational needs of the two groups are similar. It must be emphasised that the needs and interests of the blind and the partially sighted are fundamentally different and that methods of education must also be fundamentally different. The partially sighted belong to the world of the sighted, not to the world of the blind. The two groups are discussed together here simply because they raise certain common administrative issues.

PART II

THE EDUCATION OF THE BLIND

CHAPTER 2

HISTORICAL

1. The First Schools

11. The first school for the blind was established by Valentin Haüy (1745-1822) in Paris in 1785. Previous evidence of individual instruction and of care for the blind can be found in the early histories of all the great civilisations. Egypt, India, China, Greece and Rome have their rolls of men of eminence who were blind, and their records of laws pertaining to the rights of the blind. The Christian Fathers urged the care of the blind ; the mediæval churches established institutions for their protection and welfare.

12. In the eighteenth century and in the early decades of the nineteenth century many schools for the blind were founded in Europe and a number in the United States of America. The first school in Great Britain was established in Liverpool in 1790. The Edinburgh Blind Asylum was opened in 1793. This institution was not in its first intent a school but some instruction was doubtless given to those who attended to be trained in useful employments.

2. Development of Raised Type

13. The early schools made use of raised type. In developing this device it was assumed that the teachers ought to read visually the material that their blind pupils were to master by touch. Each school devised its own form of raised type—and disapproved the type used by all others. One of the best known was invented by James Gall, an Edinburgh printer and founder of the Edinburgh School for Blind Children. A new era began with the development of a system that relied not on raised type but on patterns of dots selected from a rectangle of six dots three high and two broad. The system was invented in 1829 by Louis Braille (1809-1852), a Frenchman, who having lost his sight in early childhood, became a teacher of the blind in Paris. His basic idea is now accepted, although it cannot be said that its application has been free from inconsistencies. Since the beginning of the twentieth century the tendency has been towards the universal acceptance of a single form of braille. The variations that now exist present no serious difficulty to the trained reader.

3. Development of Educational and Social Services

14. Towards the end of the nineteenth century psychologists developed considerable interest in blindness. The field of interest was mainly confined to spatial perception, and the object was not so much the study of the blind for their own sake as the understanding of normal processes through observation of the abnormal. The development of devices for measuring intelligence created a new

interest in the psychology of the blind, and many studies of their intelligence have been undertaken during the present century. Other psychological problems associated with blindness have frequently been subjects of study in recent years ; attention has been paid to sensitivity to sound and temperature, to educational attainments, to musical aptitude and to qualities of personality.

15. Provision of educational and social services for the blind has been much in the public mind, and there exists a considerable literature on these subjects. Two great wars have added to the numbers of those afflicted by blindness and have quickened the public conscience to a new concern for their needs.

16. Recent developments in the education of ordinary children have raised important issues in the education of the blind. Thus, for example, the growing interest in technical education and in vocational training for ordinary children has raised the question whether the education of the intelligent blind may not be too academic and literary. Again, the raising of the school-leaving age for normal children to fifteen with provision for a further rise sometime in the future to sixteen years of age has caused those who are interested in the education of all types of handicapped children to wonder whether it may not be necessary to raise further the age of school-leaving for those with disabilities. These examples are a reminder that the history of education for the blind has not been self-contained but has been affected directly or indirectly by all the major changes that have occurred in the education of sighted children.

17. In spite of all the past endeavours of voluntary and statutory agencies, it cannot yet be said that every blind child is ascertained at the earliest possible date, that he has always ready access to an education adjusted to his needs and abilities, that methods of teaching and courses of study have reached an optimum, or that adequate facilities exist uniformly for his vocational training and placement.

CHAPTER 3

ASCERTAINMENT AND INCIDENCE

1. Nomenclature

18. The word " blind " has many meanings. It is sometimes restricted to those who have no perception of light or no ability to discriminate objects visually. Complications arise when the word is applied to (a) those having deteriorating conditions of vision with a prognosis of complete loss of light perception, (b) those who fail to reach a standard of vision acceptable for purposes of occupation or education. In defining the blind for educational purposes it is necessary to include those who have no perception of light, those who within the period of compulsory schooling may be expected to lose perception of light and those who having perception of light have not sufficient vision to be educated by " sighted " methods.

19. *We recommend that blind pupils should be defined as pupils who have no sight or who have or are expected to have within the period of compulsory schooling insufficient sight to enable them to be educated by methods requiring vision.*

20. In the Blind Persons Act, 1920, blind persons are defined as those who are " unable to perform any work for which eyesight is essential."

21. It is not necessary that the educational and occupational definitions of blindness should be co-incident. There are those requiring methods of education using braille and other non-visual devices who are able to support themselves by their own industry. The sight that is required for reading by visual methods may well be of a higher order than the sight required for many occupations. For these reasons it should be a matter of deliberate decision and not an unforeseen anomaly that some persons should be regarded as educationally blind who are not regarded as blind for purposes of occupation.

22. *We strongly recommend that a ruling should be given about the probable status of the individual pupil under the Blind Persons Act a considerable time before the end of his period of attendance at a school for the blind.* This information is of concern to the pupil, to his parents and to the school, as it may readily determine his future employment and other aspects of his life.

2. Selection Criteria

23. It is generally agreed that a child having vision in the better eye amounting to 6/60 or less, with correction, should attend a school for the blind.* Our expert witnesses have also approved the further ophthalmic standards of admission to blind schools published in the report to the Board of Education by Sir George Newman on *The Health of the School Child* in 1933. *We recommend that the following visual standards should be employed in selecting children for admission to schools for the blind (i) a visual acuity of 6/60, with correction, or less in the better eye (ii) other conditions of the eye including deteriorating conditions that might prevent children from being educated efficiently by methods requiring vision.* This recommendation while in conformity with the proposals in the Board of Education Report gives a larger freedom to the ophthalmologist than would have been the case if the conditions of the eye had been more fully described.

24. While ophthalmic factors are of the highest importance in determining whether a child requires and can profit from education in a school for the blind it should not be assumed that other factors are negligible. In border-line cases mental ability may determine the nature of the schooling to be recommended. The highly intelligent child who is on the border-line by ophthalmic standards may be able to make such adequate use of his subnormal visual clues as to be able to remain in a school or class for the partially sighted. In some instances a child on the same ophthalmic standard may be so seriously retarded mentally that he might not be able to profit from the education offered in a school for the blind. Again, the child who suffers any other form of double handicap such as blindness accompanied by deafness may be more appropriately placed in a school for those who have his additional handicap than in a school for the blind. A further example of the inadequacy of visual criteria by themselves may be found in the case of the border-line child who has the ability and inclination to follow an

* *Note.*—Fractions used in measuring visual acuity are usually related to the Snellen test of vision. The test material consists of a standard chart with rows of printed letters of such diminishing size that they can be read with normal vision at 60, 36, 24, 18, 12, 9 and 6 metres. The child stands at a distance of 6 metres from the chart. The vision of the eye undergoing test is measured by the fraction $\frac{\text{Actual distance}}{\text{Normal distance}}$ where actual distance means 6 metres and normal distance means the distance at which a person with normal sight could read the last line that is read by the child with less than two mistakes. Thus if the child reads to the second last line, his visual acuity is expressed as 6/9. He reads at 6 metres what the normal eye can read at 9 metres.

American measures are expressed in feet. The child is placed at a distance of 20 feet from the chart.

academic career. It is remotely possible that no adequate course of secondary or higher education could be provided through partially sighted methods without risk of serious injury to sight, and that in certain circumstances his ambition would be attained only by the use of braille. The decision in such cases must take into account the judgment of the ophthalmologist, the medical officer, the psychologist, the teacher of the blind, the teacher of the partially sighted, and the wishes of the parents and the child himself. Without the fullest use of the information that is possessed by these different persons no advice could be regarded as well-founded and reliable. *We recommend that the criteria of selection for admission to a school for the blind should include degree and nature of vision, health, intelligence, aptitudes, educational attainment, educational needs and interests.*

25. Cases arise where it is not clear that a child should be placed in a school for the blind. Children who are seriously considered as candidates for admission to such a school are not likely to profit from an education designed for sighted children, but they might find satisfactory educational provision in a school or class for the partially sighted. *We therefore recommend that visually handicapped children who are not diagnosed with certainty as requiring education in a school for the blind should in the first instance attend a school or class for the partially sighted.*

3. An Ascertainment Team

26. If the selection of children for admission to a school for the blind is to be determined purely by ophthalmic factors, there is much to be said for referring all such cases to the Regional Clinics established for the certification of blindness and accepting fully and finally the advice there given. It has, however, been shown in the previous paragraph that the condition of a pupil's sight is not the only factor, although it is normally the most important factor, to be considered in deciding if he should attend a school for the blind. The selection of children for education by non-visual methods should be the duty of a team consisting of an ophthalmologist, medical officer, psychologist and a teacher or teachers acquainted with the needs of the child and with the educational opportunities available for children with defective sight.

27. This ascertainment team should not be based on the Regional Clinic. Almost every type of handicapped child requires for diagnosis and guidance a range of specialist advisors, but in all instances the advice of the medical officer and the psychologist are required. To these must be added the appropriate medical specialist and the appropriate teacher specialist. In these circumstances it would seem advisable that every education authority or group of authorities should have its own team for the ascertainment and guidance of handicapped children, and it would seem appropriate that this team should be drawn from officers engaged in a comprehensive and efficient child guidance service within the area of the authority or group of authorities. In discussing the placement of a child in a school for the blind an ophthalmologist should be present, but if that is not possible, a full report from an ophthalmologist should be in the hands of the medical officer. Where possible the ophthalmologist of the Regional Clinic should be employed. *We recommend that the selection of children for admission to a school for the blind should be the duty not of Regional Certifying Clinics for the Blind but of an ascertainment team including a medical officer, a psychologist and a specialist teacher acquainted with the educational opportunities available for children with defective sight, and that an ophthalmologist should meet with the ascertainment team or submit to the medical officer a full report on each case. We recommend also that the advice of the ophthalmologist should normally be the weightiest factor in ascertainment.*

4. The Need for Early Ascertainment

28. Several witnesses emphasised the need for early ascertainment of blindness in children and for their prompt admission to a school for the blind. Blindness may go undetected during the first or first and second years of life, but beyond this age the defect becomes apparent even to an inexperienced eye. It is not, however, possible for the inexperienced to assess deteriorating conditions of vision or to draw the line between fitness for visual or non-visual methods of education. It is therefore not possible to leave it to the parents alone to take action in the detection of blindness. Even if the parents had the skill necessary for reliable diagnosis the problem of early ascertainment and appropriate action would not be solved, because there is in the minds of many parents a marked resistance to the designation of their child as blind and to his being placed in a special school. The resistance is often supported by the belief that it is hard on a child afflicted with blindness to remove him from home to a residential school. This sense of pity is often grievously misdirected. The care of a blind child imposes a severe strain on the mother or other adult accepting the responsibility.

29. We have been informed that in some instances admission to a school for the blind has been delayed because the child was undergoing treatment at a local hospital. Schools for the blind in Britain should and do have access to adequate hospital services, and the medical care of the pupils is a constant concern of the staff and administrators. There should therefore be no need to withhold a child from a residential school because of hospital treatment given locally, unless the child were to be incapable of any education during the period of treatment. *We recommend that medical officers and teachers should promote as far as possible early ascertainment of blind children and their early admission to schools for the blind.*

5. Incidence

30. The following tables were furnished by the Scottish Education Department :—

TABLE I

*Number of blind pupils enrolled in Scottish Schools for the Blind
at 31st July, 1947.*

Name of School	Blind Pupils
Edinburgh, Royal Blind School	119
Dundee Sight Saving School	9
Glasgow, St Vincent's Special School	7
Tollcross Blind and Deaf R.C. School	16
Paisley, Laighpark Special School	13
Total	164

The total school enrolment in Scotland in 1947 was 740,000. The incidence of blind children enrolled in schools for the blind was .22 per thousand of the total school roll. It cannot be said that all blind children in Scotland are enrolled in schools for the blind, but it is highly probable that almost all who can profit by methods of blind education are enrolled. Complete figures are not available showing the numbers of blind children from each education authority area enrolled in schools for the blind, but returns for certain areas for 1947 are shown below.

TABLE II

Numbers of blind children from certain areas enrolled in schools for the blind and the incidence per 1,000 of total school enrolment in 1947.

Area	School Roll	Blind Children	
		Number	No. per 1,000 of Roll
Glasgow ...	167,000	41	0·27
Edinburgh	62,000	21	0·34
Dundee ...	26,000	12	0·46
Lanarkshire	84,000	10	0·12
	339,000	84	0·25

It will be observed that incidence per 1,000 of school roll ranges from 0·12 in Lanarkshire to 0·46 in Dundee. It would not be right to assume that these differences are due to variations either in efficiency of ascertainment or in criteria of selection. The numbers of children concerned are small, and the rate of incidence could be altered radically by such chance factors as the age of a few blind persons or the movement of one or two families to or from the area. Incidence may be related to some extent to occupational opportunities. Areas where the blind found ready employment would have a high degree of incidence, and this situation would not be significantly altered by the creation of new educational opportunities in an area where occupational provision for the blind was lacking. From these considerations it is concluded that variations in incidence from area to area afford no grounds for suspecting that ascertainment is incomplete.

31. The Ministry of Education, in their pamphlet "Special Educational Treatment," indicate to local education authorities certain estimates of the approximate incidence that may be expected for various types of handicap. These estimates are subject to local variations and they are offered as approximations that can be confirmed only by careful and thorough ascertainment. The incidence of blind children suggested for England and Wales is 0·2 to 0·3 per 1,000 registered pupils. The Scottish figures of actual enrolment, 0·22 per 1,000 of the school roll, fall within the suggested range and to that extent the adequacy of Scottish ascertainment is confirmed. The English figures of actual enrolment in 1947 were 0·21 per 1,000 registered pupils. In the United States of America the report of the White House Conference on Child Health and Protection (1931) estimates that 0·5 per thousand of children in schools are blind. The difference between the American and the British figures may be due to variations in criteria of selection or to a real difference in incidence. *We recommend that planning for the education of the blind should proceed on the assumption that the incidence of blindness in school children should be approximately 0·25 per 1,000 of the school roll.*

32. The children within the scope of this report are those who are capable of profiting from primary and secondary education, and we have been concerned with those blind children who can be educated by non-visual methods. It must be recognised that there are blind children who by reason of mental or serious physical defect are incapable of receiving primary or secondary education in a school for the blind. Some of these children remain at home, others are to be found in institutions or schools for the mentally or physically handicapped. Some of our witnesses expressed the opinion that such children may be approximately thirty in number.

6. Changes in Incidence

33. In examining changes in incidence over a period of years when medical service including school medical services were improving, when new facilities for the education of the handicapped were being provided and when ophthalmic standards were not uniform, no detailed conclusions can be reached. The available statistics support the judgment that blindness in children has declined during the present century. Some relevant facts are summarized below.

TABLE III

Number of blind children in attendance at Scottish schools in certain years.

Year	Number of Blind Pupils
1907	272
1927	290
1937	223
1947	164

During the period from 1907 to 1947 methods of ascertainment improved, and it may therefore be assumed that a decline in incidence occurred during these years. In an article by W. Robertson in the Health Bulletin issued by the Chief Medical Officer of the Department of Health for Scotland (January, 1948) a careful analysis is made of the incidence of blindness in the general population since 1919 and more particularly since 1930 when the Regional Certifying Clinics were established. The statistics refer to persons registered as blind. From these it appears that since 1931 incidence rates of the registered blind under the age of 16 have declined.

34. It is well known that because of developments in medical science certain diseases of the eye have been greatly reduced in frequency. This is notably true of ophthalmia neonatorum. The view has even been expressed by some specialists that the effects of medical treatment are now approaching their limit and that soon the remaining diseases will be for the most part congenital. In the light of evidence and opinion it may safely be assumed that a further but not spectacular decline may be expected in the incidence of blindness among children of school age. It may indeed be said that changes in the numbers of blind children may in the future depend less on changes in incidence rate than on the rate of births. To that extent the problem of planning blind education may present no greater difficulty as far as enrolment is concerned than the problem of forecasting the general school population. We consider that, subject to changes in the general birth-rate, any future plan for the education of blind children should be based on the assumption that only a slight decline will occur in their numbers.

CHAPTER 4

THE NEEDS AND INTERESTS OF THE BLIND

1. Needs of Blind and Sighted Children

35. Justice will not be done to the blind if their special disabilities are allowed to obscure the wants and interests that they share with their sighted fellows. The techniques and skills employed in the education of the blind are important, but

the mastery of braille or the counting-board are not ends in themselves. The blind child has intellectual and emotional needs that demand satisfaction through instruction and experience. He needs a pattern of behaviour as much as the sighted child. He has problems of personality and of social adjustment that must be solved if he is to live a happy and useful life. Blind children vary as sighted children vary in their aptitudes and interests, and they require a wide range of educational provision if their mental and emotional needs are to be met. They need to learn to submit body, mind and spirit to strengthening disciplines ; they must join in the search for security and adventure. Basically the needs of blind and sighted children are not unlike.

2. Needs of the Blind

36. While it is important to emphasise the community of interests of blind and sighted children it must not be forgotten that the blind have needs and interests of their own. They require an education that is not a mere imitation of that provided for sighted children. The absence of vision is a serious handicap in education in a sighted world, and it can be overcome only through carefully planned educational endeavour.

37. The mastery of the elementary tools of learning, reading, writing and arithmetic is not an easy task for the blind child. Sighted children are not born with the aptitude to discriminate the letters of the alphabet or the shapes of words, nor do they possess at birth a steady orientation that would enable the eyes to scan a line of print from left to right and to carry out other complicated movements required for reading. It may however be asserted that the reading task for the normal blind child is essentially more difficult than the reading task for the normal sighted child. A comparative study of the two processes would reveal the causes of the greater difficulty, but the fact of its existence is attested by the higher attainments in reading fluency obtained by visual methods. The blind child begins with a natural handicap ; he suffers a further educational handicap by having a technique of reading that is less efficient as a technique than visual reading. Similar difficulties are encountered in writing and arithmetic. The education of the blind child must be different from the education of the sighted child for the simple reason that the elementary tools are different.

38. It is a familiar fact that much of normal experience is visual. Blindness constricts experience. The charge is frequently made against the education of sighted pupils, especially in secondary and higher education, that it suffers from verbalism. The charge can be refuted in part by asserting that the trade of thought is conducted in a coinage of words, but the charge would be well founded if it could be shown that such education was a mere juggling with words deprived of meaning and unrelated to experience. The risk of verbalism in the education of the blind is serious. Blind people hear their sighted companions use the familiar phrases of ordinary speech and are tempted to win and keep their place in society by trading in the same counters. Through a laudable desire to be accepted as normal, they may form the habit of using words and phrases disembodied of reality. To meet this situation the education of the blind should be directed not to curbing the growth of vocabulary and speech usages but to enlarging experience. The world of vision is inaccessible to the blind child, but there are many worlds to be explored within his universe.

39. The blind child has special difficulties to meet in making his social adjustments. The nature of the problem depends on the innate qualities of the individual and on the attitudes and behaviour of parents and others in the social environment. Blindness may become an occasion for selfishness or an occasion

for self-mastery. The blind child may exploit his weakness to create a tyranny or he may seek for a balanced relationship with others. He may be disabled by the neglect or the pity of his fellows or he may be fortunate to find the blessing of steady comradeship and quiet-minded understanding. In making his adjustments he must act without the guides to conduct afforded by the visual observation of how others behave. His failure to make easy adjustments with his fellows may incur the penalty of their neglect or dislike, and his life will then be caught in a cycle where social ineptness creates an unfriendly environment that promotes more ineptness. His relationships with others will depend greatly on the quality of his inner life. If he gives himself over to self-pity and to an introspective brooding, or if he turns for happiness to an idle day-dreaming, he will find the world about him lacking in sympathy and understanding. To meet his personal and social needs education must stimulate his mind to many interests, give him a sense of communion and co-operation with others and a desire to look beyond himself. His social adjustment will be eased if he can outgrow the "blindisms" that many blind children develop. These are habit reactions or "tics," often with the appearance of psychological compulsions that the blind sometimes acquire. They include such typical movements as shaking the fingers before the face, grimacing and many gestures that convey no meaning to those who see. These are forms of behaviour that would be checked in sighted children by their own visual observation. Where they exist they stamp the blind as peculiar and create a barrier against easy relationships with the sighted.

40. Blind children have special needs in physical education. Without the guidance of sight, running, walking and free muscular movement appear to be fraught with danger and tend to be undertaken with timidity. Blind children are inclined to a sedentary life, and must have special provision made to promote physical activity. An efficient school for the blind requires teachers who are skilful in devising physical exercises that are within the compass of the blind and who appreciate that free movement is valuable because of its effects on physique and because of the self-confidence that it may help to create. Postural defects are common among blind children when physical education is neglected. These arise through lack of exercise, through habitual stooping over work and through the absence of visual observation which, to some extent, acts as a corrective of these defects in normal children.

41. Blind children share many cultural needs with sighted children. In so far as appropriate books are available in braille, and subject to differences in speed of reading, the world of literature is as free to the blind as it is to the sighted child. Drawing, painting and certain crafts are beyond the powers of the blind to create or appreciate. Many blind children and adults find their greatest æsthetic happiness in music, and some attain a high degree of skill with voice or instrument. It is an important part of education for the blind to stimulate and develop fully those creative and artistic arts and skills that are within their compass.

42. The vocational needs of the blind are largely different from those of sighted children. Because of their handicap many blind children do not progress in general education at the same rate as sighted children, and no time can be found within the period of compulsory schooling for narrow vocational training. It has, however, to be noted that many changes occurring in the education of sighted children tend towards a less unfriendly attitude to vocation than traditional education has maintained. In junior secondary schools, in pre-apprenticeship schools and in voluntary day continuation classes a new recognition is being accorded to the opinion that education can be motivated by vocational needs and interests without becoming narrow and without exploiting the adolescent. If this view is to prevail in any way in the education of the blind, safeguards would be needed

to ensure that the longer period required by the blind for general education was not devoted to narrow vocational pursuits. If these safeguards are provided, special consideration would have to be given to the pre-vocational needs and interests that are peculiar to the blind.

3. Psychological Compensation

43. In attempting to explain the full and useful lives that many blind people live, appeal is sometimes made to compensations of a sensory nature that are said to accompany blindness. Two forms of this idea of compensation are frequently presented. The first maintains that a new sensitivity is somehow given to the hearing, touch and other senses, and the second suggests that the blind receive the dispensation of a sixth sense that enables them to locate and avoid objects. The existence of these ideas is a tribute to the blind, but their validity is to be gravely doubted. Many studies have been made of the sensory discrimination of the blind especially in the field of hearing and touch. Burklen in Germany and Hayes in America have devoted much careful research to these topics. They agree with other psychologists of repute that careful tests provide no evidence for any compensatory sensory abilities. Hayes has indeed raised the question whether blindness may not be accompanied by impairment rather than by improvement of sensory discrimination. Conflicting evidence exists on the efficiency of the blind in tests of memory ; the most accurate conclusion from experimental results is that the blind are not inferior to the sighted in memory ; superiority has not been proven.

44. No one who observes the blind can fail to admire their ability to move freely and to avoid physical objects. They have in impressive degree the ability to sense obstacles. Endeavours have been made to analyse this aptitude. The commonest procedure is to examine the use made by the blind of a single possible clue to the presence of objects, such as the changes in the sound given by footsteps as an object is approached. Dependence on this clue can be tested by excluding all sounds for the purpose of the experiment. By similar techniques the effects of temperature changes, pressure changes and other possible clues that might be used by the blind in detecting objects have been examined. No single method appears to be employed, or, at all events, no single method has been isolated under experimental conditions. It may well be that the sense of distance from objects is achieved by noting and acting upon a combination of sensory clues which are available to the sighted and to the blind but which receive new attention in the minds of the blind. If this be so there is no mystery in the achievements of the blind in finding their way in the world, but there is ample room for admiration.

4. Intelligence of the Blind

45. Information concerning the intelligence of the blind comes from two main sources ; the opinion of experienced teachers and the results of intelligence testing. The information from these sources is not in conflict. The testing of the intelligence of the blind developed soon after the appearance of Binet's early work, but the technique employed was simply that of omitting items from tests for the sighted that appeared to the experimenter to depend on vision. Various refinements and improvements in testing methods have been devised, but it cannot yet be said that the necessary facts have been established to permit a reliable and final comparison between the blind and the sighted in intelligence. The evidence suggests that on the average the blind are only slightly inferior to the sighted and that the incidence of dullness and retardation is higher among the blind than among the sighted. It is apparent to all who know the blind that there are among them a considerable number who have superior intelligence. From the point of

view of educational planning the relevant facts are the number of the retarded and the existence of a normal range of intelligence among the blind. From these facts it appears that the needs of the whole group can be met only by providing educational services for the full range of intelligence.

5. Emotions of the Blind

46. In discussing the needs of the blind a brief reference has already been made to their problems of social adjustment. Exact studies using careful psychological techniques have seldom been made of personality traits and emotions in blind children. Those that have been published suggest that there is a higher incidence of maladjustment among the blind than among the sighted. Some of them indicate the most frequently occurring problems of personality; these include high sensitivity towards approval and disapproval, a considerable degree of suggestibility and a deficiency in initiative. Many teachers of the blind agree with these assessments.

47. The blind do not conform to any single pattern of emotional organisation. They show as wide a range of temperament and emotion as the sighted. Indeed it has been suggested that blindness tends to exaggerate emotions and to increase their range. It is to be expected that the frustration and curtailment of freedom imposed by blindness should have the effect of promoting a variety of emotional reactions including depression, aggressiveness, compulsive movements, speech defects and other forms of behaviour that are displayed by maladjusted sighted children. Much depends upon the family and wider social groups that form the early social environment of the child. Many teachers of the blind maintain that the isolated blind child in a sighted family and community has little chance of escaping some degree of maladjustment. Neglect is harmful to the growing mind of the blind child, but a mistaken kindness can prevent the development of the independence that is required for stability and happiness. For these reasons it is often maintained that the best environment for the blind child is one that he shares with other blind children and that is guided by experienced adults who know the needs and difficulties of the blind. The tending of personality development is not a mass operation, and it should not be assumed that the problems of the individual have been solved by placing him in an environment designed to meet the needs of the many. Each child forms his own pattern of life, encounters his own difficulties, makes his own adjustment to others. Some may develop steadily, others may meet crises. There is some evidence to suggest that during adolescence the blind boy or girl may reach a new awareness of the restrictions imposed upon him by his handicap and endure a time of frustration and unhappiness. Crises may develop in many other situations. Teachers of the blind and all who are associated with them in the care of blind children have important duties in guiding the emotional life. The Joint Committee of the College of Teachers of the Blind and the National Institute for the Blind prepared a valuable survey entitled "The Education of the Blind" (Arnold, 1936). After reviewing some of the major problems of emotional development they describe the task of the teachers of the blind thus:—"If teachers give way to excessive pity or sentimentality, if they allow children to form violent attachments to or aversions from themselves, if they are fussy, overbearing, or too fearful of their charges, all their faults will be registered, perhaps indelibly, in the emotional life of the children around them. In a teacher of the blind, especially, the warmer human qualities of imaginative insight, sympathy and comradeship that go to make all good teachers must be tempered by a self-control that never allows him to infringe the legitimate desires of the children, and by an outward show of detachment that never becomes aloofness but allows him to pass in and out of the children's daily activities with a minimum of emotional disturbance on their part."

6. Educational Attainments of the Blind

48. Many blind children fail to reach the standards of the sighted in educational attainment. For this, there are many reasons. It has already been noted that the incidence of mental retardation is unusually high among the blind, and it has been pointed out that they are subject to unusual difficulties in personality development. In some instances among those who are blind at birth or in early life a considerable delay occurs in school attendance. Those who become blind during the age of schooling have new problems to face in adjusting themselves to loss of sight and, in particular, they have to master new methods of reading and writing. All blind children have to acquire techniques of reading and writing which appear to be fundamentally more difficult than those based on vision. For these reasons and others it is to be expected that the blind should on the whole show some degree of educational retardation. Most of the evidence concerning the educational attainments of the blind comes from American sources. Test results in reading suggest that for most children braille reading proceeds at approximately half the rate of visual reading. When tests of vocabulary and usage are adjusted in length of time to suit the slower reading of the blind, the majority of them are retarded in attainment by two years or more. The gap in attainment between the sighted and the blind appears to widen as age increases. Tests of arithmetic show evidence of much retardation, but the difference between the blind and the sighted is not so great in this subject as in reading.

49. It should be noted that there is ample evidence to show that some blind children reach a high degree of educational attainment. It is well known that many blind children are capable of secondary education and that a proportion of them have acquitted themselves with distinction in universities and in other institutions of higher education. It is evident, therefore, that the needs of the group as a whole require an educational service as diverse in method and content as that provided for sighted children.

7. The Health of the Blind

50. Some blindness could be prevented if the health and hygiene of all child life could be improved. Diseases of the eye are readily spread in conditions of overcrowding. Parents may be neglectful of the common infectious diseases among children, and may fail to realise that measles, for example, might have serious effects on eyesight. Certain infectious diseases may have injurious effects during the pre-natal period.

51. Children who are blind require special medical care. Every school for the blind should have the services of an ophthalmologist and a suitable and well equipped room where he can work. The conditions of school life should be designed to promote the highest physical fitness. Special attention requires to be paid to diet, to personal cleanliness, to exercise, to sleeping arrangements and to fresh air. The blind child has difficulties enough to encounter, and these should not be increased by any failure to provide him with the best conditions that can be devised for healthy living.

52. Provision should be made for physical education adapted to the needs and interests of blind children. Teachers of the blind have shown much ingenuity in devising games that demand movement and exercise, and their ingenuity should be rewarded by making available to them gymnasia, playing fields and apparatus. Every school should have the services of a specialist teacher of physical education who should study the needs of the individual and plan appropriate exercises. Physical education can do much not only to promote good health and good posture but also to stimulate mental alertness and the sense of adventurous endeavour.

8. Meeting the Needs and Interests of the Blind

53. A survey of the needs and interests of the blind, noting their range of intelligence and temperament, their varied attainments and the problems of learning arising from their handicap leads us to *recommend that the education of blind children should be based on the assumption that their needs and interests are as varied as those of sighted children.*

CHAPTER 5

THE PROVISION OF EDUCATION FOR THE BLIND

1. Statutory Powers and Duties

54. The statutory powers and duties of education authorities, and the obligations of parents, with regard to the education of all types of handicapped children are set forth in the main in the Education (Scotland) Act, 1946. The Act requires every education authority to secure that adequate and efficient provision is made for primary and secondary education, including education by special methods appropriate to the special requirements of pupils who suffer from disability of mind or body. This special educational treatment is to be given in special schools approved by the Secretary of State for the purpose, or by other means so approved. The Act lays upon education authorities the duty of ascertaining the children in their area who having reached the age of five years require special educational treatment, and upon the parent of every child of school age the duty of providing efficient education suitable to his age, ability and aptitude by causing him to attend a public school regularly or by other means. The education authority having ascertained that a child requires special educational treatment and having provided such treatment can require the parent either to make use of the provision offered or to provide special educational treatment. The right of the parent to be present at any medical inspection for purposes of ascertainment is safeguarded, and a right of appeal to the Secretary of State is accorded to any parent who holds himself aggrieved by the issuing of a certificate proposing that a child should have special educational treatment. Handicapped children are equally eligible with other children for such services as bursaries, transport, board, milk and meals and medical services. Where board and lodging are provided in order to permit a child to attend a suitable school, no part of the cost is incurred by the parent.

2. A Service of Information

55. Witnesses assured us that no change is at present required in the statutes applicable to the education of the blind. Several of them stated that the powers of education authorities are not always applied and that parental obligations and rights are often misunderstood. Subsection (5) of section 54 of the Act of 1946 declares it to be "the duty of an education authority to disseminate in their area information as to the educational importance to any child suffering from disability of mind or body of the early ascertainment of his disability, and of the opportunity for medical examination available under this section." In the case of certain handicaps such as blindness where the incidence is comparatively rare, many authorities will not be able to point to a school within their area as a suitable place for special education. If the parents are to be convinced that early ascertainment is important it must be shown to them that ascertainment will be followed by efficient special educational treatment. This can only be done by a full and attractive description of facilities provided on a regional or national scale and in

schools located perhaps outside the area of the education authority. It would be wasteful if each authority undertook to describe every regional or national school for handicapped children. *We therefore recommend that the Secretary of State prepare an illustrated brochure setting forth the opportunities that exist in special schools for the education of handicapped children of all types and describing in informal terms the obligations of parents and of education authorities to use these opportunities for the benefit of handicapped children.* Such a brochure would assist education authorities to discharge the duty laid upon them.

3. Segregation or Co-operation

56. In discussing the organisation of schools for the blind it is well to bear in mind the wide range of abilities, aptitudes and interests manifested by blind children and the consequent need to provide varied and efficient educational services accessible to all. Three main methods of organisation exist in different parts of the world.

57. The first method, described as co-operation, gathers blind children into a class or perhaps two classes attached to an ordinary school for sighted children. This system is widely used in the United States of America and is recommended in the report of the White House Conference on Child Health and Protection (1931). It is supported by most American teachers, supervisors and others interested in the education of the blind. Blind children commonly attend a special class for reading, writing, arithmetic and handwork, but meet with sighted children of approximately their own age for the study of history, literature and other subjects where oral methods are frequently used. The teacher of the blind is specially trained. She concerns herself not merely with the teaching of braille and the use of other devices for the blind but acts as a coach in the subjects studied by the children in association with their sighted contemporaries. It is claimed that when there is an adequate supply of the appropriate books and apparatus blind children under the guidance of a trained and experienced teacher reach satisfactory standards of educational attainment. It is further claimed that they make easy social adjustments with their fellows and tend to minimise their handicap. At the secondary level blind children may continue to have the benefit of a special class or they may have the assistance of a fellow-pupil who acts as reader either voluntarily or for a small fee.

58. The co-operative system must be restricted to urban areas where the population is large enough to have sufficient blind children to form a class without too wide a range of chronological age. It involves the provision of transportation or of guidance to school by some sighted person. Those who support this method or organisation assume that a home-based education is more beneficial to a blind child than education in a residential school, and they assert that association with sighted children will in most instances prevent the growth of a sense of inferiority among the blind.

59. The system is an integral part of the American educational pattern. It is the practice in the United States to make use of special classes within the primary school for a wide range of disabilities and handicaps. The existence of many large centres of population makes the organisation practicable in these areas. Ascertainment and provision in the education of handicapped children are not uniformly so thorough in the United States as in Britain, and it may well be that the insufficiency of the system is not fully demonstrated, especially in rural areas. At the secondary level the American plan of special classes or special readers should be seen in relation to the elective curricula and to the availability of a wider

range of subjects than is to be found in Scottish secondary schools. Secondary education in Scotland requires more book study than American secondary education.

60. The system should be judged by its effects on all blind children and not by the benefits that it brings to those who by reason of their location in cities are able to profit from it. In a small country or in a small state blind children from rural areas must attend a residential school if they are to have an efficient education, but it is possible that by establishing local schools in urban areas the numbers available for residential education might fall below the minimum required for efficiency. A system that sacrifices the rural blind child to the urban blind child must be judged insufficient. The form of co-operation here described may be well adapted to the American scene, and may indeed have the values that its supporters claim, but it cannot be recommended as a means of meeting the needs of blind children in Scotland.

61. The second method, which is also a form of co-operation, gathers blind children into a class within a school for the physically handicapped. This form of organisation has some of the faults and weaknesses of the preceding method. It is applicable only to urban areas and is based on a small all-age class. It has, in addition, certain weaknesses that do not exist when the class is attached to an ordinary school. Blind children meeting in a school for the physically handicapped are apt to become a self-contained group or to encounter only those with visual handicaps. Worst fault of all, those who are brightest among them have no opportunity to make adequate progress in secondary education. It is unlikely that they will have ready access to a wide range of books in braille or be generously supplied with the material and apparatus required for general education and pre-vocational training or have the range of experienced specialist teachers appropriate to their cultural and physical needs and interests. The basic objection to the blind class in the school for the physically handicapped is that it becomes a small, one-class, all-age school where the varied educational needs of children cannot be efficiently met. There may be some measure of disagreement regarding the optimum enrolment for a blind school, but no doubt exists regarding the unsuitability of a single class or double class unit attended by fewer than twenty pupils.

62. The third method, described especially by its opponents as segregation, gathers blind children into a residential school. The evidence presented to us on the organisation of schools for the blind is unanimously in favour of residential schools. Many arguments have been adduced in support of this method of organising the education of the blind in Scotland. The numbers of blind children at present in Scotland are large enough for one school and for one school only. A large residential school has facilities for the mental and social education of children that cannot be provided by a small school whether it be day or residential. Among those facilities are a large supply of books in braille and the availability of musical instruments for education and recreation. It has been contended that the day school attached either to an ordinary school or to a school for physically handicapped children cannot give the training in hygiene and in socially approved habits of behaviour that are readily given in a residential school. Non-residential schools raise questions of daily travel that are not always easily solved, but it should be remembered that residential schools raise questions of travel over longer distances at the beginning and end of every term. The weightiest argument of all is that having regard to the size and distribution of the population the only practicable method of providing an efficient education for all blind children is that of the residential school. If this conclusion is accepted, the small day schools at present in existence will require to be closed. Such a decision will be met

with regret by pupils and teachers who have developed loyalties to these institutions, but they will doubtless be prepared to accept a judgment in favour of their closure if greater benefits can thereby be secured to blind children in the future. In making this proposal we are aware that the numbers of blind children may be expected to fall and that the difficulties of the small schools in providing an efficient education adapted to the range in needs and interests of blind children will be increased.

4. One Residential School

63. Various estimates of the optimum size of a school for the blind have been submitted to us, but their range is comparatively small. Most if not all of our witnesses agree that the optimum size for a school to meet the needs of blind children between the ages of five and sixteen would be approximately one hundred and fifty. If to this school there should require to be added nursery classes and a variety of classes for pupils who elect, as many at present do, to remain in school until they are eighteen years of age or over, the optimum could only be reached by enrolling in a single school all blind children who are capable of profiting from instruction. The total number of such children is, as we have seen, declining, and this fact adds weight to the argument for the restriction of provision to the maintenance of a single residential school. The choice inevitably falls on the Royal Blind School, Edinburgh. *We therefore recommend that all blind children in Scotland should receive their education in the Royal Blind School, Edinburgh.*

5. Size of Classes

64. The draft of the new Schools (Scotland) Code requires, as does the existing Code, that the number of pupils on the roll of any class for blind children or for children so defective in sight that instruction in a special class is required should not exceed 15, except in special circumstances and with the express approval of H.M. Inspector. We understand that no class for the blind or partially sighted exceeds the permitted number and that several classes have an enrolment of 10 or less. No criticism has been offered of the regulation save that the maximum permitted in nursery and infant classes should be ten and that a similar number be fixed as the maximum for secondary school classes. Our witnesses have been unable to suggest any circumstances which might justify the approval of classes with an enrolment of over fifteen blind pupils, and *we therefore recommend that the number of pupils on the roll of any class for blind children should not exceed 15 and that the maximum number on the roll of any nursery school class or infant class or secondary school class should not exceed 10.* It is not necessary to make recommendations governing the age range to be found in any class, provided that the establishment of a single residential school for blind children is adopted. The recommendation suggesting maximal class enrolments requires an adequate staff, and the allocation to classes is then a matter of organisation that may safely be entrusted to the headmaster. It might happen that at any given period sufficient pupils of a particular age might be found so homogeneous in ability and previous achievement that they would form a single age class. More probably it would be found that differences in intelligence, in age of occurrence of blindness or of ascertainment and in educational attainment might bring into a single class a group of children with a spread of four years in chronological age. The recommendation regarding size of class makes no distinction in enrolment between nursery school classes and infant classes, but it is hoped that where administrative difficulties permit, enrolment at the nursery stage should in practice not exceed six in number per class. Efficient care in the early years prepares the way for efficiency in primary and secondary education.

6. Co-operation with English Local Education Authorities

65. We understand that local education authorities in England are being compelled by the decline in the numbers of the blind and by other considerations to consider the closing of certain small schools. The Ministry of Education regulations now require that a school attended by children of all ages should have not fewer than five classes. The main difficulty arising from the decline is to be found at the secondary level. Few blind children have the ability and interest to warrant their enrolment in a full secondary course, but it would be a denial of the spirit of modern education to refuse the few their opportunity. Three residential secondary schools exist in England. These are Worcester College for the Blind (boys), Chorleywood College for Girls, and the Royal Normal College (boys and girls). If the numbers of the blind decline, Scotland may not be able to have a school giving secondary education to pupils solely from within her borders. The decision whether co-operation should take the form of admitting English children to the secondary department of the Scottish school or of transferring children to English secondary schools must be reached on grounds of educational efficiency and accessibility. But we should like to say here that the Royal Blind School, Edinburgh, is well equipped and has an excellent tradition, and it may well be possible for it to remain an institution serving the needs of blind children of all ages. *We recommend that consultations should take place between the Secretary of State and the Minister of Education to ascertain whether the Minister and local authorities in the North of England would be prepared to regard the Royal Blind School, Edinburgh, as a regional school serving the requirements for secondary education of blind children in Scotland and in the northern counties of England.* Such an arrangement would be of benefit not only to children desiring an academic course but to all blind adolescents; for with a larger number enrolled in the older age groups it would be possible to plan a secondary education varied to meet a wide range of interests and abilities.

7. Nursery School Education

66. Blind children under five years of age require much care if they are to develop fully in mind and body and if they are to acquire habits that will enable them to become socially adjusted. This does not mean that they are to be placed in a loveless but hygienic environment and reduced to automata. Those who have seen children of nursery age in one of the National Institute for the Blind's Sunshine Homes for Blind Babies will agree that they show every sign of happiness and of rich individuality. It may be conceded that in certain exceptional homes parents will be found who have the understanding, skill and devotion required for the efficient education of a blind child. In general, however, there should be opportunity for all blind children to attend a nursery school. Many parents who are genuinely concerned with the welfare of their blind children, and who are able to provide satisfactory physical conditions for their upbringing, will realise that blind children are more likely to develop good social attitudes in a group of blind children under skilled care than as members of a sighted family where parental affection may be tempted to undermine confidence and independence. In some homes, because of economic stress or illness, or death of the mother or other cause, it may not be possible to provide adequate training for a blind child. In these circumstances a nursery school is undoubtedly necessary. The object of any nursery school is not to make an early beginning with the subjects of primary school study but to give children a healthy and undisturbed environment where they can learn the lessons of co-operative living, acquire habits of personal hygiene, and make their first explorations in a world of interest and adventure.

67. The residential nursery school for blind children should be part of the school for the blind. Young children cannot engage in all the activities of older

children, but careful organisation of school life can at times bring young and old together to their benefit. *We recommend that provision should be made in the residential school for the blind for the enrolment with parental consent of children under five years of age.* Normally children would be at least two years of age on enrolment, but we do not recommend the imposition of a lower limit lest circumstances should arise in which the interests of a child could best be served by admission to a nursery class before the age of two years.

8. Infant Education

68. Blind children require a longer period than sighted children to make their preliminary explorations of the world. To hasten them into the school arts and especially into the art of reading involves the risk that they will merely render braille symbols into spoken words without comprehension. The dangers of verbalism at this and at later stages can be averted only by enriching the experience of the blind child. This is in itself an adequate reason for relating infant education to the nursery rather than to the junior school. Other considerations lead to the same conclusion. Thus the children who are enrolled after five years of age, whether through delayed ascertainment or late occurrence of blindness, are more easily absorbed if the infant group has not been hurried forward into the school arts. Again more time can be devoted to encouraging free movement, corporate living, self-help and other personal and social achievements if reading, writing and arithmetic are not allowed to dominate the infant scene. *We therefore recommend that the nursery and infant departments of the school for the blind should be closely associated.*

9. Courses of Study for Older Children

69. In the report of the Joint Committee of the College of Teachers of the Blind and the National Institute for the Blind entitled "The Education of the Blind" (Arnold, 1936) careful consideration is given to courses of study for older blind children. The evidence presented to us by teachers of the blind is in general agreement with the proposals made in the report. Several of these proposals, particularly with reference to the varied courses recommended for pupils over 14 years of age, could not be implemented in small schools for the blind. The proposals are already applied to the curriculum of the Royal Blind School, Edinburgh, and we find it unnecessary, therefore, to make detailed recommendations. For the most part the curriculum consists of subjects commonly studied in schools for the sighted, but special attention is paid to certain forms of experience. The importance of good speech is stressed. Frequent use is made of oral teaching. It is recognised that sighted children acquire much of their knowledge of ordinary things by sight, and that special endeavour must be made to repair the loss to the blind child by description and discussion and by means of touch and sound. Handwork is important because it promotes acquaintance with things through touch and through overcoming the resistances of materials, and because it is a preparation for later vocational interests. Physical education is required to develop posture and create self-reliance in movement. Hygiene builds habits of personal and social health and prepares the blind child to take his place in the community. Good manners and pleasant social relationships are attainments to be desired, for blind and sighted children alike. Many of these desirable ends may be furthered by informal clubs and other agencies in a residential school for the blind.

10. Vocational Training

70. In its earliest form the care of the blind was largely concerned with providing them with suitable employment. In the public mind schools for the blind are still apt to be regarded as institutions for mastering the elements of basket-making, boot-repairing, knitting and piano-tuning. This view is an injustice to the blind and to schools for the blind. The child who is born blind or who becomes blind does not thereby forfeit his right to an education designed to develop his aptitudes and to fit him for a share in the social inheritance. He should be educated not as a workman but as a man, and his vocational training must be regarded as only a part of his education. It is to be recognised, however, that blindness imposes a limitation on available forms of employment and that some special provision for the vocational training of the blind must be made if they are to win for themselves the right to economic independence and the opportunity to share in the work of the community. It must also be recognised that new attitudes to work are developing in contemporary society and that new attitudes to vocational training are in consequence being formed. Work is coming to be recognised as the contribution of the individual to social well-being, a necessary obligation of citizenship. In consequence, preparation for work is beginning to be accepted as a function of education. The new development is not being translated into a narrow vocational training in schools for the sighted and it should not be so translated in schools for the blind. It is, however, accepted that many adolescents respond to the appeal of future vocation and are prepared to learn under that impulse with an enthusiasm that some of them would not reveal in traditional learning. Provided that the vocational interest is not too narrow and that it is confined to the latest years of schooling and to only part of the school day, much profit to the individual and to society can be obtained from a measure of vocational preparation. These considerations apply to the blind and to the sighted alike.

71. Bearing in mind the need for continuing the general education of blind children up to the age of compulsory attendance *we recommend that normally no training directed to the mastery of a specific vocation should begin until the pupil has reached sixteen years of age.* This recommendation is not meant to exclude experiences in handwork or music or any other subject that has a cultural as well as a vocational value. The intention is to avoid specific training of a technical nature before the end of the period of compulsory schooling. Many blind children elect to remain in schools until eighteen, and many are under vocational instruction until they are twenty years of age. It is important that general education should be continued while vocational training is being given, and *we therefore recommend that throughout any period after sixteen years of age and up to the age of twenty when vocational training is conducted in a school or in any institution offering such training, the general education of the blind should be continued and should include the study of English, current affairs, speech and physical education.*

72. Blind people are able to fill a considerable range of occupations. Teaching, the ministry, massage, music, piano-tuning, typewriting and shorthand, machine knitting, boot-repairing, telephone-switchboard operating, basket-making and mat-making are among many employments within the scope of the blind.* The vocational training of the blind does not fall strictly within the terms of our remit, but the nature of post-school employment has a bearing on school work. We are convinced that the wide range of ability, aptitude and educational achievement displayed by the blind requires that up to the limits imposed by their handicap a

* For a full discussion of suitable employment for the blind with lists of occupations, see The Report of the Inter-Departmental Committee on Deviate Children, Union of South Africa, 1945.

wide range of occupations should be open to them. We recognise that as numbers decline it may be found less and less economical to make available numerous forms of training, but nevertheless *we recommend that the utmost endeavour should be made to provide vocational training after the age of sixteen years for as wide a range of occupations as can be found adjusted to the needs and abilities of the blind and to their opportunities for employment. We recommend also that as changes occur in industry and in industrial practices and techniques there should be continuous endeavour to find new avenues of employment for the blind.*

11. Higher Education

73. The proportion of pupils completing courses in secondary education satisfactorily is lower among the blind than among the sighted. The numbers of the blind qualified for admission to universities and other institutions of higher learning are few. In spite of this fact it is a matter of debate whether the blind should be encouraged to go forward to higher education. Those who doubt the wisdom of advising the blind to attempt higher courses are prompted by fears not of their inability to undertake the required studies but of their opportunities of employment in occupations suited to their attainments. Those who are of the contrary opinion point to instances of blind men and women who have attained positions of importance in the world of letters or music or who have served with acceptance in the Christian ministry. We are aware of the disappointment that must be felt by those who having striven to overcome the handicap of blindness and having completed approved courses of higher education find themselves debarred from pursuing the profession or vocation of their choice. We cannot, however, approve of the other courses which are either to deny the blind opportunities of higher education or to make these opportunities available to those who know in advance that they will be employed in work appropriate to their attainments. There are blind men and women of exceptional intellectual ability and exceptional qualities of temperament and personality who are capable of complete courses of higher education. Most of these have in the past secured suitable employment. Of the minority who have not thus succeeded it cannot be said that all of them would have been happier if they had been denied their opportunity.

74. Our interest in this subject arises from our concern with secondary education. *We recommend that blind children with the appropriate ability and interests should have the same opportunity as sighted children of obtaining a secondary education designed to qualify them for admission to universities and other institutions of higher education.*

12. Provision of Books

75. Several of our witnesses expressed dissatisfaction with the arrangements now made for subsidising the production of books in braille. Books for the blind are expensive to produce and they serve a limited public. Without some form of assistance books in braille could not be made readily available to the great majority of the blind. Voluntary agencies make very large contributions towards the publication of braille books and music ; some witnesses felt that too much is being required of voluntary organisations in meeting the costs of publication. *We recommend that the Secretary of State in conjunction with the Minister of Education should consider the award of increased grants from public funds to meet the production costs of text books for blind pupils and blind students and of books for general reading.*

13. Provision of School Equipment

76. A wide range of apparatus and equipment exists for the education of the blind, but it is costly to produce and has a limited market. Some of it, such as typewriters and wireless sets, requires little or no adaptation but much of it must be made specially for the use of the blind. Special equipment is required for shorthand, geography and handwork and for vocational and pre-vocational training. It also includes apparatus that is of general educational value, such as talking books, braille writing machines, braille clocks, thermometers adapted for the blind and self-threading needles. Costs per pupil for the required equipment are bound to be high but apparatus must be made available if blind children are to receive adequate education. *We recommend that adequate apparatus and equipment should be provided for the education of the blind.*

14. Education for the Blind with Additional Handicap

77. Approximately one-fifth of blind children of school age have an additional physical or mental handicap. A very considerable number of these are mentally handicapped. Some of the mentally handicapped blind children are incapable of receiving primary education and have therefore been excluded from our consideration. They probably form a majority of the mentally handicapped blind. They are to be found at home or in institutions for the ineducable. Some of the physically handicapped are also incapable of profiting from ordinary education. Returns for England and Wales show that in 1946 there were 1375 blind children of school age and that these included 55 physically handicapped children, most of whom were not at school, and 240 mentally handicapped children, of whom 194 were not at school. The numbers of mentally handicapped blind children in Scotland were estimated by certain of our witnesses as approximately 30 in number.

78. Our concern is with children who are educable. The ascertainment of low intelligence in a blind child is difficult. Undoubtedly there are children who show by their behaviour and their inability to learn the simplest lessons of bodily care that they are incapable of profiting from education. These children should not be given a place in a residential school for the blind. In many instances it will not be possible by short periods of observation supplemented by the use of mental tests to ascertain if mental handicap exists to such a degree as to prevent a child from profiting from non-visual methods of education. Resort must then be made to empirical procedure. The child must be sent to a residential school for the blind and given the opportunity to show his ability or inability to profit from education. The period of trial will require to be long ; a year at least may be needed in many instances before a verdict is reached. If the mental retardation is not so serious as to prevent a large measure of profit from training and education, the child should be placed in a special section of the residential school for the blind. For this purpose a special cottage unit to be used as home and school should be provided, but with opportunities to make use of the gymnasium, grounds and other facilities of the residential school. The class enrolment should not exceed ten pupils. The cottage would serve as a place of probation for those whose mental ability was being ascertained and as a home and school for those retarded children who showed sufficient intelligence to profit from instruction. Children who were judged unsuitable during the probationary period and those who by reason of serious mental handicap were judged unfit for trial should be placed in institutions for the ineducable, or should in suitable circumstances receive home care. *We recommend that blind children who are mentally handicapped should a probationary period in a cottage unit attached to a residential school for the blind*

spend and, if proved to be capable of profiting from instruction, should receive their education in the cottage unit but with access to educational facilities provided in the residential school for the blind.

79. Some of our witnesses have pointed out that blind children who have been brought up in unsatisfactory homes fail to form normal habits of cleanliness and self-care or show marked signs of emotional maladjustment. It is difficult in such cases to decide whether abnormal behaviour is to be ascribed to an enduring psychopathic condition or to the influence of an undesirable social environment. Children of this type should have the same probationary arrangements as the mentally handicapped and should be eligible on the same conditions for education in the cottage unit. Among their number, as in lesser degree among those who are intellectually retarded, there will be some who after adjustment are capable of profiting from education by the methods usually employed in the education of the blind; they should be admitted as ordinary pupils to the residential school and should not then be regarded as doubly handicapped. *We recommend that children who present serious problems of behaviour should be given a probationary period of training in the cottage unit for the mentally retarded, and that if they show themselves capable of profiting from schooling they should receive their education either in the cottage unit or in the residential school.*

80. The education of a child who is totally blind and totally deaf (and therefore dumb) requires the undivided attention of a teacher. This provision has in a few instances been made in England. The teacher requires a high degree of skill, endless patience and a profound respect for the worth of another's life. A few of the children who are thus seriously handicapped can make some degree of progress in education and by skilled teaching can grope towards a comprehension of their world. Many are incapable of entering into effective communication with their fellows after the most devoted care has been given to them. It is desirable that the few of these doubly handicapped children who in their early years show promise of educability should have their opportunity of learning to understand their environment and to communicate with one another. It should be noted that children who suffer from these double handicaps are few in number and that only a minority of these will be found capable of profiting from education. It might well be that over a period of years no such child would be found in Scotland. Provision might require to be made occasionally for one or two. A child with a double handicap of this nature should be associated with a group of children, and it makes little difference whether the children in the group are blind or deaf. If a choice is to be made not on grounds of accessibility and accommodation but of educational principle, the balance would appear to be in favour of placing the blind-deaf child in a school for the blind. Each child presents a special problem, and there can be no prescribed course of study or accepted methods applicable to all. There is much to be said for having such children educated at a single centre for Great Britain. This arrangement would permit the teachers concerned to share their experience, and it might permit a certain amount of freedom to the teachers, who might on occasion and for a brief part of the day take charge of two blind-deaf children. *We recommend that children who are totally deaf and totally blind and who show promise of ability to profit from instruction should receive their education at a centre for Great Britain to be decided upon by the Secretary of State and the Minister of Education.*

81. *We recommend that children who are totally blind but partially deaf should be educated in schools for the blind if they have acquired normal speech and that they should have individual hearing aids if they can profit from their use.*

82. A small number of children are blind and physically handicapped in various ways. *We recommend that children who are blind and physically defective should be educated in a residential school for the blind provided that adequate care can be given to their physical disability, that they are capable of profiting from the instruction and that the nature of their disability is not likely to cause alarm or mental strain to other blind children in the school.*

15. Teachers of the Blind

83. A full description of present practice in training teachers of the blind and proposals for the future are to be found in the report of the previous Advisory Council on Education entitled "Training of Teachers."* We find ourselves in general agreement with the proposals regarding the content of training. Some of our witnesses recommended that in future no blind teacher should be appointed to a school for the blind. They based their contention on the belief that while the blind teacher may have the knowledge and the skill required for teaching in a narrow sense, they are unable to take a full part in correcting the mannerisms of the blind or in encouraging them in free movement and in physical recreation. Those who support the inclusion of blind teachers on the staff of a school for the blind say that the blind teacher has an appreciation of blindness that is beyond the reach of the sighted teacher, that he affords living witness of how the handicap of blindness can be overcome and that the acceptance of blind men and women as teachers is a demonstration to the public that the blind are capable of discharging the responsibilities of an important profession. The argument in favour of employing blind teachers is sometimes directed solely to the employment of teachers in such subjects as handwork and music and cedes the point that the teacher of general subjects who is largely responsible for the self-discipline and behaviour of young children should be sighted. All are agreed that blind teachers require to have rich intellectual and personal qualities if they are to be successful. Care must therefore be exercised in selecting blind students for admission to training as teachers. *We recommend that blind teachers should not be responsible for the general education of children under ten years of age and that the proportion of blind teachers to seeing teachers in a school for blind children should not exceed 25 per cent.*

16. Experiment and Research

84. Much ingenuity has been shown by the blind and by their teachers in developing devices to extend the knowledge and independence of blind children. Encouragement should be given to invent and to try new devices for helping blind pupils to master their environment and enlarge their experience. Courses of study and methods of teaching should not be bound to tradition. Blind education should be responsive to changing conditions and new demands.

85. Blind education presents a wide field for research. Adequate measures of intelligence have still to be devised. Perceptual abilities, especially perception of space, require to be studied and these may have important bearings on educational practice. Problems of temperament and personality need examination. Tests of vocational aptitude should be developed in order that more adequate services of vocational guidance and vocational education might be planned. Fuller information is required concerning the incidence of blindness.

86. Research cannot readily be based on a training institution, for the needs of teacher supply are so small that no permanent staff could be justified. The

* Cmd. 6723 H.M. Stationery Office, 1946. Price 1s. 6d.

appropriate authorities to promote and to conduct research in Scotland appear to be the teachers of the blind, the W. R. Ross Foundation and the Scottish Council for Research in Education. *We recommend that teachers of the blind should be encouraged to continue to invent and try new devices for the education of the blind and to continue to seek new methods and better content of courses, that they should interest themselves in research and that research bearing on the educational problems of the blind should be undertaken by teachers of the blind, the W. R. Ross Foundation and the Scottish Council for Research in Education.*

PART III

THE EDUCATION OF THE PARTIALLY SIGHTED

CHAPTER 6

SOME OF THE PROBLEMS INVOLVED

1. The Handicap of Restricted Vision

87. The great majority of children with restricted vision, whether corrected or not, are able to maintain their place with children of normal sight. Burt has shown* that there is probably no significant difference in incidence of restricted vision between backward and normal children, and his judgment has been confirmed by other studies. There are, however, a number of children with comparatively high degrees of visual impairment who fail to make progress in ordinary schools or classes. Children of this type are too infrequent to be detected by control group methods of studying educational retardation, and their handicap can only be appreciated by examining a number of children who suffer from the disability. If no adequate educational provision is made for such children, some will keep their place in the ordinary school, but may do so at the cost of further injury to their sight. Many will fail to make satisfactory progress and may remain in school without satisfaction to themselves or to their teachers. Some may be directed to a school for the blind and receive an education that is ill-adapted to their needs. Without special treatment, the handicap of an initial restriction of vision may be followed by a further decline in visual acuity through misuse of sight, or by educational retardation due to inappropriate methods of learning or by both of these additional handicaps.

2. Some Early Experiments in Educating the Partially Sighted

88. In 1905 a survey was made in London under the direction of Dr James Kerr, medical officer of the London School Board, of children who were not blind but who had not sufficient vision to profit from instruction in ordinary schools. An examination of some 3,000 children drawn from different socio-economic environments was made almost simultaneously in Glasgow in order to ascertain the incidence of visual defects in children attending schools for the sighted. The London investigation resulted two years later in a decision to provide visual methods of instruction for certain partially sighted children who had been admitted to London schools for the blind and to establish a school for children with high degrees of myopia at Camberwell. This school, said to be the first ever to be instituted for partially sighted children, was based on principles established by Dr Kerr and by N. Bishop Harman, ophthalmologist to London County Council. The institution of school medical inspection afforded new opportunities for the ascertainment of impaired vision, and many authorities in Scotland and England began to provide classes for partially sighted children. The movement rapidly spread to other parts of the world. No uniform pattern of provision was accepted ;

* Burt, C., "The Backward Child"—University of London Press, 1937.

each country devised a system adapted with greater or less success to its requirements and opportunities. It should be noted therefore that the provision of education for partially sighted children has not the support of the traditions that exist in the education of the blind. A period of less than half a century is hardly adequate to provide the experience on which to base a long term policy for any group of children. The problem is aggravated when the half-century was largely spent in wars and recovery from wars and when during the period new educational devices and methods were evolved and major changes occurred in medical opinion. The education of partially sighted children presents problems that have not been satisfactorily solved in any part of the world ; the problems have not even been posed in enduring or final form.

CHAPTER 7

ASCERTAINMENT AND INCIDENCE

1. Descriptive Terms

89. Various terms have been used to describe children who are not blind but who have vision that is inadequate for fully sighted methods of education. They have been known as the partially blind. This description has been discarded mainly because it emphasises deficiency rather than positive quality. The term is unsatisfactory also because it suggests that the children should be educated in association with the blind, and perhaps by methods devised for the blind. It raises objections in the minds of parents who are unwilling to have their children described in any way as blind when they have sufficient sight to care for themselves and to live without much difficulty or restriction the life of sighted people. Sometimes the school or class to which such children are sent includes the term "sight-conservation" or "sight-saving" in its title. It is now open to doubt if much sight is conserved in these schools, and it is a matter of debate whether the amount of sight that may be saved for some children outweighs the disadvantage of taking them out of the stream of normal education. The term may also be criticised in that some children who are legitimately enrolled for special visual education are suffering from progressive diseases ; their sight in certain instances will not be conserved by any educational device. The description is not apt for children who have limited but static vision. The schools have sometimes been described as designed for myopic children. It is true that children with high degrees of myopia form a large proportion of those enrolled in schools for children with defective vision, but many other forms of defect require special educational treatment. The term that is coming into common use in educational practice and in the literature of the subject is "partially sighted," and it is the most suitable that has been suggested. *We recommend that children who are not blind but who by reason of visual defect require special educational treatment should be described as "partially sighted children."*

2. Preliminary Tests of Vision

90. Sight-testing is commonly undertaken as part of the school medical inspection at approximately seven years of age. This examination fulfils a most useful function, but it ought to be supplemented by tests of vision given before and after the normal school inspection. Even with the existing types of test it is possible to obtain a measure of visual efficiency for many children before the age of seven years. A later test is required to discover cases of degeneration of vision. All of our witnesses who discussed the preliminary testing of vision in young children agree that Snellen tests can be given by teachers, and their evidence

is confirmed in the literature of the subject. In accepting the view that teachers should undertake this duty we are impressed by four main arguments. Firstly, the class teacher has an excellent opportunity to know if a child has enough intelligence and experience to be able to name the Snellen test letters or to follow the directions required for the E test. Secondly, the teacher, being well known to the child, is not likely to cause the nervousness that is apt to overtake some children on being tested by a stranger. Thirdly, the teacher should be encouraged to take an interest in child health in general and in vision especially, since visual ability is so much used in schools. Lastly, the skilled and interested teacher can observe in class such occasional evidences of eye-strain as inflammation, rubbing of the eyes and peering, and these may suggest an immediate test and thus avoid the delay in waiting for the next medical inspection. We have not had any evidence suggesting that teachers cannot be trained to conduct preliminary tests of vision, and there seems ample reason to refute such a contention were it entertained. The tests are simple enough to give. Provided that the test charts are adequately illuminated and that the simple directions are followed, there should be no more unreliability in the teacher's testing than there is when tests are administered by others and there is good reason to believe that because of the child's familiarity with the teacher the unreliability might be less than with strangers. *We recommend that teachers should give a simple test of vision to children as soon as they are able to follow the necessary directions and recognise either the letters or the E orientation.* The function of this preliminary test is to select such children as need special examination. *We recommend that as a result of the preliminary tests of vision teachers should report to the school medical officer all children who have a visual efficiency of 6/9 or less in the better eye, after the most complete correction has been obtained, in order that they may have a further examination by an ophthalmologist.*

3. Ophthalmic Tests

91. Tests given by teachers are concerned only with visual acuity. They have the effect of drawing attention to children who have certain eye diseases in addition to errors of refraction, but they are not intended to have the authority of professional ophthalmic investigation. It is the duty of the ophthalmologist to examine the conditions of the eyes of children who are candidates for admission to a school for the partially sighted. The commonest condition that has in the past led to admission to special educational treatment is myopia of a high degree. The ophthalmologist has to concern himself not merely with the refractive error but with prognosis. He has also to be responsible for diagnosis and treatment of defects or injury in the cornea, choroid, retina and optic nerve. *We recommend that every education authority should have the services of an ophthalmologist readily available and that he should have suitable and well equipped premises for examination and treatment.*

4. Team Ascertainment

92. The most important evidence to be considered in determining whether a child should have special educational treatment because of defective vision is that furnished by the ophthalmologist. But his evidence requires to be supplemented. As in the case of other defects so with partial sight, the child who is highly intelligent can learn with fewer sensory stimuli or clues to meaning than the child of low intelligence. It does not follow that all partially sighted children with high intelligence can profit from the normal methods of education. Some may have deteriorating vision or may risk injury to vision by attempting visual work that is beyond their powers. Because such factors as intelligence and eye condition are variable and often independent of each other, it is important that both factors be taken into account in educational guidance. In many cases of defective vision it is important that general health should be promoted, and for

this purpose and others it is necessary that the school medical officer be consulted. In border-line cases a deciding factor may be the progress being made in school and the hygienic conditions of the school. This information can best be furnished by the headmaster or the class teacher. It is therefore important that their knowledge should be available in deciding the child's educational future. In such cases it will also be necessary to know the conditions existing in the school or class for partially sighted children to which the pupil might be directed, and this information can best be obtained from the headmaster or a teacher in the receiving school. *We recommend that need for special educational treatment of a partially sighted child should be determined by a team based on the child guidance service and including an ophthalmologist, school medical officer, educational psychologist and the headmaster or teacher of the sending and of the receiving school or class.*

5. Visual Criteria of Ascertainment

93. The subject of the visual criteria to be employed in ascertaining the partially sighted is one of the most contentious in the field of education for handicapped children. The literature of the subject and educational practice bear testimony to the great variations that exist in the incidence of partially sighted children; the range is due not so much to varying interpretations of agreed criteria as to disagreements concerning the choice of criteria. No serious disagreement exists regarding the degree of refractive error to be accepted in selecting partially sighted children; difficulties arise when loss of visual acuity is accompanied by degenerative conditions. It is generally agreed that children with acuity after correction of 6/24 or less in the better eye cannot be educated by the visual methods employed in ordinary schools and classes. This degree of vision is recommended as one of the selection criteria in the report of the committee of inquiry into problems relating to the partially sighted appointed in 1931 by the Chief Medical Officer of the Board of Education. Their recommendations are contained in the Report on Partially Sighted Children published by His Majesty's Stationery Office in 1934. The finding has been accepted in the Report of the Inter-Departmental Committee on Deviate Children made to the Minister of Education in the Union of South Africa in 1945. Approximately the same measure, 20/70 in feet as compared with 6/24 in metres, was accepted by the American Committee on Optics and Visual Physiology in 1929 as a standard for referral to ophthalmologists concerned in the selection of children for partially sighted classes. The criterion is accepted in several of the state systems of education in the United States of America. Our expert witnesses recommended its adoption. We have already recommended* that children with a visual acuity of 6/60 or less in the better eye should be educated in a school for the blind. For selecting partially sighted children the range of visual acuity with correction now proposed is from 6/24 to over 6/60 in the better eye.

94. Controversy centres on myopia. In the early stages of education for the partially sighted, one of the accepted objectives was to prevent serious injury to children with high degrees of myopia. Better ophthalmic treatment appears to have reduced the dangers of detached retina and other serious consequences that followed when myopia was unattended by preventive and therapeutic measures. Doubts have been expressed concerning the possibility of preventing degeneration in certain cases by insisting on precautions in the use of the eyes. The opinion is sometimes expressed that myopia will take its course without regard to visual habits acquired for educational or occupational purposes. Up to this point the controversy is mainly concerned with facts. Evidence is available to suggest that detached retina seldom occurs in childhood and that some halt may be called to progressive myopia by securing hygienic conditions for the use of sight. If it is

* Paragraph 23.

assumed that the evidence is conclusive and that "dioptries* are saved" in schools for the partially sighted the controversy is not ended. Its terms begin to be educational rather than ophthalmic and they are concerned with values as well as facts. For those who are conscious of the importance of sight saving, the controversy is resolved in a decision that partially sighted methods should be employed if loss of any degree of vision can be saved by such means. For those who believe that children should whenever possible remain with normal children for the sake of educational values, the controversy is resolved in the decision that the saving of a few dioptries may be bought at too great a price.

95. The controversy existed before the Report on Partially Sighted Children† was published. The report indeed contains valuable evidence on the problem of saving dioptries through special educational treatment. We find ourselves in general agreement with these proposals and recommend that the standards for selection of myopes suggested in the Report on Partially Sighted Children be, in general, accepted. They are summarised in the report in the following terms:—

"No hard and fast rules can be laid down, but it is desirable to formulate general principles in order to reduce divergences in practice. These principles are:—

I. *If the eyes show fundus changes indicative of a serious condition of myopia the child should always be admitted to a special school.*

II. *In the absence of signs of such fundus changes the child should usually be admitted to a special school if:—*

(a) *after repeated examinations it is found that the myopia has been increasing steadily at the rate of more than 1 dioptre per annum;*

(b) *after a period of slow rate of increase or apparent arrest it is found that there is a sudden rise in the rate of progress to more than 1 dioptre per annum.*

III. *The actual amount of myopia should not be the sole factor in determining whether a child should be sent to a special school.*

IV. *The age of the child must be taken into account. The younger the child the more serious are factors such as degree of myopia present and the rate of progress of that myopia. In doubtful cases the existence of a history of myopia in the family may be a deciding factor.*

V. *Children with a visual acuity after correction of 6/24 or worse should be admitted to a special school, though the majority of these will probably fall within category I above."*

We are informed that subsequent experience suggests that the criterion of an increase in myopia at the rate of approximately 1 dioptre per annum in cases without fundus change need not always be applied, and we therefore recommend that the criterion of an increase in myopia of approximately one dioptre need not be uniformly or rigorously applied.

96. *We recommend that in the selection of non-myopic children for education by methods appropriate to partially sighted children the critical range of visual acuity after correction should be from 6/24 to over 6/60 in the better eye.*

97. In making these recommendations we desire to stress that they are guides to the making of a common standard and not rules to be applied automatically. *We recommend that children who do not come within the categories determined by these criteria should be eligible for admission to schools or classes for the partially sighted on other evidence submitted by an ophthalmologist.*

* A dioptre is the unit used in measuring the refractive power of a lens. A lens with a focal length of one metre has the power of one dioptre. The power is the reciprocal of its focal length. Thus a lens with a focal length of half a metre has a power of two dioptries. The measure is applied to the power of accommodation of the eye.

† See paragraph 93.

6. Incidence Rates

98. The Scottish Education Department informed us that in 1947 when the total school roll was 740,000 the number of children reported as partially sighted was 174, giving a rate of 0·24 per thousand children on the school roll. The Ministry of Education informed us that in 1947 the incidence rate of partially sighted children in England and Wales was 0·53 per thousand children on the school roll. The Report on Partially Sighted Children* suggests an incidence rate of 1·0 per thousand registered pupils, but we were advised that with a less stringent application of the criterion of a loss of 1 dioptré per annum in cases of myopia, the expected rate might be 0·75 per thousand registered pupils. The estimate commonly accepted in America, and confirmed by enrolment in cities with well developed services for the partially sighted, is 2·0 per thousand of the population of school age. In the Union of South Africa the expected rate of incidence is 2·5 per thousand of the population of school age. Variations may be due to real differences in the frequency of impaired vision in different countries or localities. Differences in the efficiency of health services may account in part for some of the variations, and nutritional and hygienic standards may also account for part of the variation between countries and localities. There are, however, grounds for the belief that a considerable part of the variation in incidence rates is due to differences in standards of ascertainment. The range of difference in localities may be illustrated by the following tables based on information furnished by the Scottish Education Department and the Ministry of Education :—

TABLE IV

Incidence of partially sighted children in relation to school enrolment in certain areas in Scotland in 1947.

Area	School Roll	Partially Sighted Children	
		Number	No. per 1,000 of School Roll
Glasgow ...	167,000	88	0·53
Edinburgh	62,000	44	0·71
Dundee ...	26,000	29	1·12
Lanarkshire	84,000	44	0·52
	339,000	205	0·60

TABLE V

Incidence of partially sighted children in relation to school enrolment in certain areas in England in 1947.

Area	School Roll	Partially Sighted Children	
		Number	No. per 1,000 of School Roll
Birmingham	128,000	97	0·76
Bristol ...	45,000	32	0·71
Croydon ...	24,000	25	1·06
London ...	300,000	345	1·15
Liverpool ...	114,000	62	0·55
Bradford ...	32,000	95	2·97
	643,000	656	1·02

* See paragraph 93.

99. In making an assessment of the expected rate of incidence we have examined the available facts and have taken into account improved medical techniques and a growing tendency on the part of many ophthalmologists to reduce the numbers of children recommended for special educational treatment. *We recommend that the incidence of partially sighted children in Scotland should be provisionally estimated at the conservative rate of 0.75 per thousand of the school roll.*

7. Changes in Incidence

100. Important changes have occurred in diseases of the eye in recent decades. Trachoma has virtually disappeared. Detachment of the retina is rare among children. We received information concerning the incidence of conjunctivitis and corneal opacities as shown in school medical examinations in Edinburgh in 1926-27 and 1946-47, which is summarized in the following tables :—

TABLE VI

Percentage incidence of conjunctivitis as shown in school medical examinations in Edinburgh at the dates and for the ages indicated.

Age Group	1926-27	1946-47
Infants ...	0.55%	0.06%
9 years ...	0.45%	Nil
13 years ...	0.2%	Nil
16 years ...	0.5%	Nil

TABLE VII

Percentage incidence of corneal opacities as shown in school medical examinations in Edinburgh at the dates and for the ages indicated.

Age Group	1926-27	1946-47
Infants ...	0.2%	Nil
9 years ...	0.12%	0.2%
13 years ...	0.25%	Nil
16 years ...	Nil	Nil

All the evidence we received indicates that no spectacular fall in the incidence of partial sightedness among children may be expected.

8. Strabismus or Squint

101. Strabismus by itself cannot be regarded as an educational disability in the sense that it renders a child suffering from it incapable of profiting from ordinary schooling. But in certain instances it may have psychological concomitants of an emotional nature that may interfere with the development of a well integrated and adjusted personality. The fact that blindness may develop in the convergent or divergent eye is warrant enough for care and treatment, even if emotional disturbance did not sometimes occur. Correction can often be effected either by occlusion of the straight eye or by operation. Treatment should be given early in life. Observant parents and teachers engaged in nursery schools are aware that eye co-ordination is an art to be learned and that fluctuations occur in its efficiency, especially in the first year of life. Parents should readily accept the advice of the school medical officer when he recommends treatment for strabismus.

9. Colour Blindness

102. Total colour blindness is rare ; red-green blindness seldom occurs in girls or women, but it is present in approximately 4 per cent. of the male population. Colour blindness, especially of the common type, is not a serious disability in education. It prevents the individual from entering fully into experiences requiring certain colour discriminations as in some arts and sciences and in certain occupations, notably seamanship, but educational or occupational choice is not severely limited thereby. It is important that teachers, particularly in secondary schools, should be aware of those pupils whose colour vision is limited. This knowledge would prevent misunderstanding of the child's reactions to colour situations in school and misdirection into occupations where colour blindness is a disadvantage and in some instances a source of danger. *We recommend that tests of colour blindness should be given to pupils and that this information should be made available to them before entering upon secondary school courses and to those responsible for vocational guidance.*

CHAPTER 8

THE NEEDS AND INTERESTS OF THE PARTIALLY SIGHTED

1. Vision in Education for Partially Sighted Children

103. Partially sighted children live in the world of the seeing, not of the blind. Their primary need is for an education as closely related to that of normally sighted children as their impaired vision will permit without serious deterioration of sight. They should not be regarded as widely different from other children, and to this end their experiences up to the limits of their vision should be varied and rich in educative value. The general rule which we have followed in studies of handicapped children—that they should approximate as closely as their handicap allows to the life and learning of ordinary children in ordinary schools—is especially applicable to the partially sighted. Educational organisation should be of such a nature that partially sighted children should be associated not with the blind but with groups of normal children or with those near to normality in interests and ability. Any devices of magnification that can bring normal methods of teaching and learning within their scope should be made fully available to partially sighted children. *We recommend as a basic principle that the education of partially sighted children should approximate in methods and content to the education of normal children as closely as the visual handicap will permit without causing serious deterioration of sight.*

2. Intelligence

104. Various investigations of the intelligence of partially sighted children have been made, but they do not afford sufficient reliable information to form the basis of a comparison with sighted children. The American investigations are to be interpreted in the light of the principle that children with intelligence quotients of less than 70 should not normally be admitted to partially sighted classes. (These classes are associated with schools for normal children in the United States.) Some of the investigations are concerned with small numbers, and their evidence should not be accepted as conclusive. Children of high intelligence may be able to keep their place in the ordinary school, even with defects that are within the visual range of the partially sighted, and in consequence the incidence of high intelligence within that visual range would be diminished. It should be noted that the intelligence of partially sighted children cannot be fairly measured by tests depending upon visual experience, and it is not always certain that any

test item is independent of visual experience. The Report on Partially Sighted Children* records a careful experiment comparing the intelligence of 141 partially sighted children, measured by individual Stanford-Binet tests, with the intelligence of a control group of sighted children derived from similar environments and measured by a group test. The conclusion is reached that no difference in intelligence existed between these two groups. American investigations suggest that partially sighted children may be slightly less intelligent than normal children. There can be no doubt that there are some partially sighted children who are mentally retarded, and it may even be true that they are proportionately more frequent than are the mentally retarded among the sighted, but the important fact is that a very large proportion of partially sighted children are near average or above average in intelligence and are capable of profiting from education adapted to their visual abilities. *We recommend that education adapted to the needs and interests of children with a wide range of intelligence should be provided for the partially sighted.*

3. Emotional Needs

105. Only a few studies have been made of the emotional development of the partially sighted.† It has been suggested that the partially sighted pupil who is left in the ordinary class is liable to fail in school work and to add to his visual handicap a disabling sense of inferiority and frustration. It has also been said that the partially sighted child who competes with his sighted contemporaries in games is apt to be afflicted in the same way and to fail in establishing satisfactory social relationships. No serious attempt has been made to study the emotional development of the partially sighted by careful methods, and these conjectures are not uniformly accepted by teachers of partially sighted children. It may however be agreed and *we recommend that partially sighted pupils should be encouraged to mix freely with their sighted contemporaries in all activities that are permitted by their visual ability and which involve no serious risk of further impairment of sight.*

4. Educational Attainments

106. A careful investigation of differences in English and arithmetic between groups of partially sighted children and sighted children balanced in intelligence and social background is described in the Report on Partially Sighted Children.† The results show that the two groups were approximately equal in arithmetical ability but that an important difference existed between them in English. The difference in English is not so great in spelling as in other aspects of language achievement, but in English as a whole partially sighted children of thirteen years make scores that approximate to those of ten-year-old sighted children. American evidence suggests that a considerable amount of retardation exists before many children are admitted to classes for the partially sighted, but some of the retardation is reduced when special educational treatment is undertaken. In many investigations the test of retardation is fitness to do the work of the grade in which the individual is placed, and no account is taken of chronological age. When results are expressed in these terms, they may appear at first sight to be satisfactory. They are satisfactory in the sense that administration has found a class with achievement equal to that of the partially sighted group or individual concerned. They are unsatisfactory in that they carry no reminder that when the age of normal

* See paragraph 93.

† For a brief summary of these studies and for a fuller account of measures of intelligence see "The Psychology of the Physically Handicapped"—R. Pintner, J. Eisenson and M. Stanton, Crofts, 1941. A brief discussion of these will also be found in the Report of the White House Conference on Child Health and Education, Section III, Century Co., 1931.

school-leaving is reached, the partially sighted child, unless his education is further prolonged, leaves school as a retarded pupil. It cannot be said that sufficient facts have yet been gathered by educational research to establish the educational attainments or potentialities of partially sighted children; but they do suggest, and *we recommend that educational provision should be made on the assumption that many partially sighted pupils are capable of reaching, and some of surpassing, the average educational attainments of sighted pupils.*

5. Health

107. The general health of partially sighted children requires attention for various reasons. Pupils who are diagnosed as partially sighted have usually spent some time in school without the educational treatment they need. They therefore require efficient health services to ensure that they will be fit to overcome their retardation and restore the lost years of inefficient education. Many investigations show that a considerable proportion of partially sighted children come from homes with comparatively low socio-economic status. Several eye diseases are related to unhygienic conditions and to undernourishment, and their effective treatment depends upon improvement in general health. These arguments in favour of adequate medical attention can be reinforced by appeal to the need for ophthalmic examination and treatment. Partially sighted pupils, especially those who have degenerating eye conditions, should be given frequent ophthalmic examinations. *We recommend that partially sighted pupils should have general medical examination once per year and ophthalmic examination twice per year and more frequently in special cases.*

6. Activities

108. Partially sighted children should be encouraged to lead an active life. Children with defective vision who have no hobbies and no interests in physical activity may turn readily to reading or to other pursuits of a sedentary kind that depend on visual habits. Without such encouragement they are apt to cut themselves off from their sighted fellows and to become aware of their disability, even to the point of morbidity. Without adequate physical education and care in the class-room they tend to develop postural defects and to become clumsy in movements. Their needs include physical exercise and a wide range of activities. *We therefore recommend that partially sighted children should receive adequate physical education under such safeguards as may be required to avoid injury to sight, and that they should be encouraged to develop an interest in suitable outdoor activities.*

CHAPTER 9

THE PROVISION OF EDUCATION

1. Conflicting Views of Ophthalmologists

109. A review of the needs and interests of partially sighted children shows that they require educational experiences appropriate to a wide range of ability, planned to prevent the development of personal frustration or social maladjustment, supported by adequate health services, rich in interests involving physical activities and adjusted to the degree and state of their vision. At this point those who would seek to design an efficient provision of education for the partially sighted are halted by disagreement among ophthalmologists. It has already been noted in

* See paragraph 93.

paragraph 94 that the controversy centres on myopia and that it begins with the problem of ascertainment. Some ophthalmologists consider that myopia is largely an inherited condition and that no amount of eye usage has any bearing on its progress. They are prepared to advocate that in most if not all cases that come within the visual categories suggested for the partially sighted, myopic pupils should be allowed to remain in ordinary classes in ordinary schools. This extreme position is not common. Others maintain that myopia can be hastened in its development by prolonged focussing on small objects, as in reading or writing or sewing or by much stooping. They consider that in the interests of sight conservation children with high degrees of myopia should be sent to special schools or classes where these activities would be controlled if not prohibited. The controversy extends to the methods and content of education in schools for the partially sighted. Some ophthalmologists are prepared to allow myopic children to read ordinary text-books, although they may restrict the period of reading, and they impose few prohibitions on the curriculum or activities of these children. Others restrict reading to material hand-printed by the teachers in letters over half an inch high. They forbid myopic children to indulge in normal physical exercises or to engage in gardening, or swimming, or football or hockey or any active game that requires running and occasional stooping. Some consider that writing should be done with ordinary materials; others require the use of chalk on blackboards or broad crayons on paper. The existence of this controversy is in itself evidence of a shift in expert opinion. During the early stages in the development of education for partially sighted pupils, prohibitions were generally accepted. The freedom that is now advocated by some ophthalmologists and practised in some schools represents a new phase.

110. Faced with conflicting expert advice education authorities choose, and rightly choose, the way of caution, but extreme conservative positions are being abandoned gradually and the newer methods are beginning to be tried with care. The Report on Partially Sighted Children* recommended a greater degree of freedom than is accepted in many schools for the partially sighted in Britain. Our expert witnesses supported these recommendations. It seems likely that in the near future partially sighted children will be permitted and indeed encouraged to engage in educational activities that approximate more closely than at present to those of fully sighted children. The recommendations made in this report for the provision of education for partially sighted children take note of the tendency towards relaxing prohibitions. Meanwhile it should be observed that the views of ophthalmologists do conflict and that their lack of unanimity makes it difficult to plan efficiently and with certainty for the education of this group of handicapped pupils, although it must be recognised that variations in educational practice and in ophthalmic judgment are to be expected in a service that has served only two generations of children. The existing wide array of practice should provide within the next two decades a better foundation of fact for wise planning in the education of partially sighted pupils.

2. The Use of Lenses

111. Planning for the education of partially sighted children must take account of the recent development in reading aids. Various devices for magnification in addition to spectacles are in use. The epidiascope has been used for group reading and for the viewing of illustrations. Clear type books in large print are freely used in the United States of America and to a less extent in Britain. These devices are less revolutionary in their effects than the magnifying glasses that are beginning to be adopted in England. The first of these, known

* See paragraph 93.

as the Leeds Reading Aid, consists of a lens, 6 inches long and 3 inches wide, mounted on a desk with a folding shelf and with a 25-watt lamp to illuminate the reading material. The windows of the room are colourwashed to prevent reflections. The second, known as the London Lens, is in wide use in the London area. This Lens depends on natural lighting or on the general artificial lighting of the classroom. It is mounted on a movable stand with a broad base and an adjustable stem. Equipped with this lens partially sighted children might, it is said, be able to take their place at age eleven or earlier in ordinary schools for fully sighted children. Those who have made most use of this Lens do not consider that it obviates the necessity for special educational treatment of partially sighted children, especially in the early stages of the primary school, but they are of opinion that it has important bearings on the content and methods of education in schools for the partially sighted and may permit many children to return to the normal streams for secondary education. Several disadvantages are apparent, however, in the London Lens. Some distortion of the print is apt to occur towards the ends of the reading line; the planes of the lens and the reading matter may be out of parallel; the apparatus is not cheap and it cannot readily be transported home; children who are working with a reading and writing book simultaneously, as for example in reading and working problems in arithmetic, tend to use it for only one of the processes, and so almost invariably dispense with it in writing.

112. The period of use of lenses has been too brief to provide all the facts necessary for appreciating their value. It may require a further decade before evidence of their efficiency can be gathered. Although credit is due to those who have done the pioneer work in developing these lenses, it is a matter of regret that research and experiment have not been vigorously promoted and assisted by all agencies concerned in the education and welfare of the partially sighted. The development of these aids must be taken into account in planning the education of partially sighted children; since their usefulness has not been fully assessed, plans cannot be made with finality.

3. Numbers of Partially Sighted Children

113. We have indicated the needs of partially sighted children, and have shown that because of disagreements among ophthalmologists and because of developments in the use of lenses planning presents certain difficulties. Before making recommendations for the education of partially sighted pupils it is necessary to consider briefly the numbers that are now receiving special educational treatment and the numbers that require such provision. It has already been noted in paragraph 98 that the number of partially sighted pupils receiving special education in 1947 was 174. Assuming a rate of incidence of 0.75 per 1,000 of the school roll, the number that ought to have received special educational treatment in 1947 when the school roll was 740,000 was 555. This number will be considerably increased a few years hence when the population of school age will increase temporarily as the result of the post-war rise in the birth rate. It will be recalled that the estimated rate of incidence proposed in this report is conservative. The essential fact is that an adequate plan for the education of partially sighted children must be based on the expectation that for Scotland as a whole at least three times as many children as were provided for in 1947 require special treatment in some form.

4. Separation of Partially Sighted and Blind Pupils

114. In the absence of special provision for partially sighted pupils and because of varying standards in ascertainment many children have been enrolled in local schools for the blind who ought to have had special educational treatment

as partially sighted children. The association of blind with partially sighted children should be discontinued. On this subject our witnesses are unanimous. Partially sighted children require methods of education that are fundamentally different from those appropriate to blind children. They find themselves under restrictions which while necessary for the blind are irksome to the sighted. They may be tempted to read braille by visual means and thus impose a severer strain on vision than is effected by the reading of print. They may be accommodated in rooms with direct sunlight, a condition that is acceptable in schools for the blind but not for the partially sighted. They may develop a sense of superiority that makes later adjustment with fully sighted people difficult, or in the phrase of one of our witnesses they may become "lackeys of the blind." They form school friendships with the blind, and as they commonly go separate ways in later life they have to form new friendships in the world of the sighted. The blind may not suffer from the association in the same way and to the same degree as the partially sighted, but the system is also disadvantageous to them. They are apt to depend on their partially sighted fellows and thus fail to develop the self-reliance that is necessary for their happiness and efficiency in later life.

115. The difficulties of association increase in the later years of schooling. Partially sighted pupils have no opportunity of efficient secondary education in a small school shared with the blind. The proposal for discontinuance is already implied in our recommendation in paragraph 63 that all blind children should be educated in one residential school. In order, however, to avoid dubiety on this important subject *we recommend that partially sighted children should not attend classes or schools for the blind.*

5. Segregation or Association of Partially and Fully Sighted Pupils

116. The main problem in organising the education of partially sighted children is the nature and degree of their association with fully sighted children. Many different practices have been followed, and the question has been extensively debated in the literature of the subject. Prejudice, tradition, convenience, educational principle, invention of new devices, disagreements of experts are among the ingredients of this problem. The solution implied in the neglect of the partially sighted is that they should be allowed to take (or lose) their chance with normally sighted children. Another solution, described as segregation, is that they should be placed in classes or schools for their exclusive use. A further solution, known as non-segregation or co-operation or association, is that within an ordinary school they should have a special class of their own linked for certain activities not requiring much use of sight with classes for fully sighted children. The two latter solutions are modified by the use of lenses in certain schools and for certain types of children.

117. Sometimes the plan of segregation has been recommended for myopic children simultaneously with the plan of non-segregation for children of reduced but static vision.

118. In most countries, often by force of circumstances and sometimes by intent, segregation and non-segregation exist in different areas or in different types of community.

(1) THE CASE FOR SEGREGATION

119. Those who support segregation can point to instances where the association of a class of partially sighted children with classes of fully sighted children has been abandoned, and they can rest their claim on the efficient work

that is at present being done in certain schools for the partially sighted, especially for younger children. It has been maintained that adequate attention to the general health and welfare of the partially sighted is more likely to be secured when they form a special segregated group than when they are associated with ordinary children in ordinary schools. A particular variant of this argument is that partially sighted children require special ophthalmic care and that they should be brought together into a class or school where a special room and special equipment are provided for this purpose. These services may be available to a special class for the partially sighted attached to an ordinary school, but it is less likely that they will be readily available if partially sighted children, perhaps with the use of lenses, are merged with fully sighted children in various schools over a wide area. Those who recommend the system of association often require that periods of reading or other work involving careful visual discrimination should be restricted, and they sometimes prohibit activities that are part of the normal curriculum for fully sighted children. Exceptional treatment of this kind, it is argued, causes difficulties to the teacher of ordinary classes. Some of our witnesses who have had experience as class teachers and as teachers of partially sighted children in an associated system say that by reason of the special arrangements necessary for the care of vision the partially sighted pupils are apt to be regarded as troublers of the peace and efficiency of the ordinary class. They have to leave and return to the class at special times, with the result that the ordinary class has to accept a rigid time-table to suit the minority. The freedom of the teacher to continue an engrossing activity beyond the allotted span of minutes is curtailed by association with partially sighted pupils. It is therefore regarded as desirable in the interests of the fully sighted pupils that the partially sighted should be segregated. It has been represented to us that more care is likely to be given to hygienic conditions of the eyes in classes conducted by teachers who give their time and interest to the partially sighted than in classes conducted by teachers concerned with ordinary children. The teacher of the partially sighted acquires experience in the use of sight and is able to note signs of deterioration or improvement and to recommend or provide the necessary modifications in educational practice.

120. It is sometimes suggested that books in large type should be used by children who are partially sighted. These books are expensive to produce. It is certain that the wide range of text-books already in use in primary and secondary schools could not be made available in larger type. If partially sighted children are to be educated in association with sighted children they must have different books or impose their books on the sighted or dispense with large type books. This difficulty does not arise in the segregated school or class. It is also argued that pupils in segregated schools or classes are likely to have due care taken by the teacher to ensure that they use their spectacles and keep them in good condition. The teacher of a group of partially sighted pupils can make the necessary contact to secure parent-teacher co-operation in the care of the eyes at home.

121. In several instances partially sighted pupils attend schools for the physically handicapped where they tend to form a self-contained group or to be associated with blind children. Justification may be found for associating the partially sighted with sighted children who have a physical handicap other than blindness. These children might be said to be segregated in the sense that they do not attend ordinary classes in ordinary schools, but they could have an effective association with other handicapped children who are sighted. It should be possible for partially sighted children to share certain non-visual experiences with certain types of sighted but physically handicapped children, and thus have the medical and other benefits that are available in a segregated system without being restricted for all educational activities to the partially sighted group. Those who

present this argument are supporting partial segregation. The system might also be described as a modified form of association.

(2) THE CASE FOR ASSOCIATION

122. Appeal can be made to successful work in certain schools in England and in many schools in the United States where the system of associating partially sighted children with fully sighted children has been generally adopted. It is maintained by those who uphold this form of organisation that partially sighted children must in later life find their place in a sighted world and that they should be associated as much as possible with fully sighted children throughout school. These children should not be encouraged by segregation in childhood to regard themselves as belonging to a special group. The argument that dioptries are saved for the myopic in special schools for the partially sighted is countered by the assertion that the evidence on this subject is incomplete and that the educational losses through segregation are not balanced by the amount of sight conservation that is claimed. The argument that special medical and ophthalmic care is provided readily in segregated schools brings the reply that no difficulty arises when the children are grouped in a class in a primary school and that a little effort in record-making and in administration can secure such care for partially sighted children, even when they are scattered throughout ordinary schools in the area of an education authority.

123. Segregation is apt to result in many areas in the institution of an all-age class. Within such a group considerable differences in intelligence and educational attainment readily exist. It is not possible for the teacher in such a class to use the techniques of a rural school for seeing children because the partially sighted children should not attempt the amount of reading that is normally undertaken in a small rural school. Children who attend the same all-age class may be under the care of the same teacher throughout the period of schooling and thus lose the stimulus that sometimes comes from change of teachers. In the all-age class children can seldom, if ever, have the benefit of specialist teachers, and they cannot have the company of their contemporaries in activities such as physical education where it is important to limit the age range of the participants. The weakness of the all-age class or the two—or three—class school for the partially sighted becomes apparent in secondary education where courses are bound to be limited in number.

124. The system of association does not surrender the advantages of special care by the teacher of the child's vision and effective contacts with the home. The system implies that the child is not treated as a fully sighted pupil. He returns to the partially sighted room and is under the care of a special teacher for reading and other work requiring the refined use of sight. Advice and training are here given that should enable the child to acquire habits suited to the condition of his eyes. Association allows children to proceed at their own rate through school and does not bind them to the speed of the small segregated group for the partially sighted. The system also allows partially sighted children a variety of courses in secondary education when it is employed at this level.

125. It is claimed for the method of association that it is adjusted to the short periods of special treatment that are all that is necessary for some partially sighted pupils. Thus some children are retarded because of late ascertainment of defective vision or as the result of interrupted attendance caused by injury to the eyes. Such children require a period of rehabilitation and special tuition before being returned to ordinary classes in ordinary schools. The process of return is likely to be facilitated if they are not segregated but share normal

educational experiences. It should be noted that the numbers of partially sighted children who are capable of participating in the work and life of ordinary schools will increase if the use of lenses is found to be beneficial. A development in their use would strengthen the case for the method of association.

126. Those who support the method of association say that objections to pupils leaving the class of their sighted fellows are exaggerated and are becoming less relevant. They point to the fact that this objection has lost much of its force because the idea of the class as a homogeneous group of pupils learning with equal speed and efficiency has been abandoned. The modern teacher is developing skills and techniques to meet differences in intelligence and aptitude. It is coming to be recognised that the education of children is not confined to the mastery of certain subjects of instruction but includes a wide range of services designed to promote the health of the child and his welfare. In order that these benefits may be made available, the exceptional child must often be out of the room for special purposes such as medical or psychological treatment. The teacher has also become accustomed to the adjustment class in the larger primary schools where pupils are withdrawn from the ordinary stream in order that they may receive special tuition in some subject or be given special coaching after absence. It is contended that the system of association can be adapted to give long periods of special instruction in the class for the partially sighted when the children are young or when they are first recommended for special educational treatment, and that these periods can be shortened as the children are trained in the wise use of their eyes. As a result, a wider range of experience is made available as the children grow older and they are thus able to have a choice of course in secondary education.

(3) THE POSITION IN LARGE URBAN AREAS

127. In considering proposals for the organisation of education for partially sighted children in urban areas it is to be remembered that a considerable extension of existing provision is required. An opportunity is now presented to experiment with various methods of organisation, and in the light of limited knowledge and of new developments in the use of lenses the need for experiment is apparent. The time has not come to be dogmatic about methods of educating the partially sighted. It is however evident that the small self-contained school for the partially sighted organised in two or three classes does not provide the educational experiences and opportunities that the children need. In schools of this kind much devoted service is given by teachers. The teaching material often consists of copious work on the blackboard and of sheets hand-printed by the teacher. Teachers in schools of this type have spent many laborious hours when the school day was over printing or stamping large letters to supply reading material adjusted to the interests of children. In these segregated classes pupils are apt to remain throughout their school lives even when they could return if properly equipped and guided to ordinary schools. In some instances no change in methods and no important improvement in equipment has been made since their first foundation and benediction by the old School Boards. They should not now be salvaged.

128. In some urban areas partially sighted children attend schools for the physically handicapped. These classes are of value, especially to partially sighted children with low vision or with rapidly degenerating conditions. They are of service also to partially sighted children who, while not mentally handicapped in the full sense of the term, are under average in intelligence. They are well suited to the considerable number of children who in addition to being partially sighted suffer some further physical handicap. The value of these classes for other partially sighted children is enhanced if the principle of association with

fully sighted children in the school for the physically handicapped is adopted. There are children in schools for the physically handicapped who make normal progress in primary education, and it should be possible by careful organisation to give to many if not all of the partially sighted children the stimulus of their comradeship in appropriate studies and activities of the school. This form of association is not entirely satisfactory for older partially sighted children with average or over-age ability and attainments. Without some degree of association the plan of conducting classes for the partially sighted in schools for the physically handicapped cannot be regarded as satisfactory at any age.

129. The method of associating one class or two classes of children with an ordinary primary school deserves to be tried. It is recognised that care must be taken in finding a school suitably placed and with hygienic conditions adapted to the partially sighted. It is also recognised that the success of this form of organisation depends upon the sympathy, understanding and responsiveness of the headmaster and teachers of the primary schools selected. The numbers of partially sighted children admitted to one school should be approximately thirty, enough to form two classes of fifteen pupils. The system could be used, but less efficiently, with a single class of fifteen pupils. The teachers of the partially sighted should be ready to experiment under the guidance of an ophthalmologist, and the children should be furnished with suitable lenses where they can profit from their use.

(4) RECOMMENDATIONS

130. Our recommendations on organisation of schools or classes for partially sighted children are as follows :—

(1) *Partially sighted children should not be educated in segregated schools or classes.*

(2) *Classes for partially sighted children may be organised in schools for the physically handicapped, and can be so organised with advantage for children who have an additional handicap or who present special conditions of vision including rapid deterioration, or who are slightly retarded in ability or in attainment; but such classes should be so organised that the partially sighted share with sighted handicapped children in appropriate subjects of instruction and school activities.*

(3) *Where segregated schools are abandoned, partially sighted children may be educated in a special class or in special classes associated with primary schools.*

(4) *Classes should have a maximum enrolment of fifteen pupils, and should not exceed two in number in any primary school, which should be chosen with reference to its location and to the degree of co-operation that may be expected from the headmaster and teachers.*

(5) *Partially sighted children should have the necessary equipment, including lenses, that may be required to enable them to profit from instruction in the special class and in ordinary classes.*

6. Partially Sighted Children in Rural and Certain Urban Areas

131. The rule that in general it is easier to organise classes for exceptional pupils in urban areas than in rural areas applies to the partially sighted. In the preceding paragraph we have recommended that the maximum enrolment in a class for partially sighted children should be fifteen pupils. The minimum should be ten pupils. Assuming an incidence of partial sightedness of 0.75 per 1,000 of the school roll, the effect of this minimum is to prohibit local education for

partially sighted children in most communities or areas having less than 13,000 children on the school roll. This does not mean that a large burgh with a smaller population of school age could not have a class for partially sighted children, but it does mean that any class to be established in the burgh would in all probability require to recruit partially sighted children from a wider area. How wide the area might be would be determined by transport facilities.

132. What special educational treatment should be given in rural areas served by a single teacher or two teacher school? It is tempting to suggest that partially sighted children should attend the rural school. In support of this view it might be said that the number of pupils under the charge of a teacher is small, that techniques are well developed for meeting the needs of individual children, that country children might be unhappy in a residential school in a city, and that difficulties would arise in transporting the pupils at the beginning and end of each term. Some of these arguments may readily be opposed. Teachers in rural schools have a difficult situation to manage because of the age-range in their classes. The techniques that have been developed depend largely on the use of assignments that have to be read individually; the pupils are required to do more reading and writing than children in urban schools. In sparsely populated districts it is not possible to provide specialist health services required by some partially sighted children, nor can secondary education be obtained in the local school. The risk of unhappiness in a residential school is not great. Children are adaptable, and if they are given care in a pleasant environment and are surrounded by other children like themselves they are far from being unhappy. The conclusion is inevitable that the efficient education of partially sighted children in sparsely populated areas can be accomplished only in a residential school.

133. It is anticipated that all partially sighted children from rural areas and from urban areas that cannot support classes with an enrolment of at least ten pupils could be accommodated in a single residential school. Because of the absence of essential facts concerning the distribution of partially sighted children in Scotland no accurate estimate can be made of the number of places that ought to be provided in such a school. The facts could be ascertained roughly by gathering data in a single year from the medical examinations of children of seven years and over. The data could be treated as a sample, and an approximate estimate made of all partially sighted children of school age within the area of each education authority. It would then be necessary to ask each authority to make proposals for the education of those partially sighted children who belonged to its area. The number of pupils requiring residential places could then be ascertained with a considerable degree of accuracy. The guess is hazarded that the number might be between 150 and 250 pupils. We feel that the school should be located in Edinburgh.

134. Our recommendations on organisation of schools for partially sighted children may be summarised as follows :—

(1) *Partially sighted children in communities or areas that cannot provide a class of ten pupils should attend a residential school.*

(2) *One residential school should meet the needs of all such children in Scotland.*

(3) *In order to ascertain approximately the number of places to be provided, a sample survey should be made at medical examinations for children of seven years and over in a single year. An estimate should then be made of the numbers of partially sighted children of all ages and education authorities requested to prepare schemes for the education of partially sighted children belonging to their areas.*

(4) *The residential school should be situated in Edinburgh.*

7. The Royal Blind School and the Residential School for the Partially Sighted

135. One of our witnesses proposed that there should be a close association between the Royal Blind School and the residential school for the partially sighted. It is generally agreed that the two schools should not be entirely separate. Partially sighted children with deteriorating sight require frequent ophthalmic observation and treatment. The decision when to transfer these children to a school for the blind is not easy to make ; it can be facilitated if the partially sighted school and the school for the blind work in concert. The two schools should not however be merged. The needs and interests of the partially sighted are largely different from those of the blind. The arguments in favour of separating the two classes of children with defective vision in the local schools apply with equal force to the residential central schools. The two schools should not be under the same controlling body, nor should they have the same headmaster, nor should they share the same grounds. *We recommend that the proposed residential school for the partially sighted should not be on the same site nor under the same administration as the Royal Blind School but that the two schools should have the services of the same ophthalmologist who would be able to recommend transfers of pupils from one school to the other.*

8. Transfer of Partially Sighted Pupils to Ordinary Classes

136. Some partially sighted children, especially those who are not among the brightest intellectually, may require to receive special educational treatment throughout their school life. A number should, however, be able to return to ordinary classes in ordinary schools in their later school years. If the condition of the eyes is likely to remain static, if the child has enough sight to read with the aid of a lens, if he has learned to use his eyes carefully, and if he is mentally fit and has reached a degree of educational achievement appropriate to his age, he should return to work with sighted children. In those cases where some slight loss of dioptries is still occurring he should adopt the same course if he fulfils the foregoing conditions. *We recommend that on the approval of an ophthalmologist children who are mentally, physically and educationally fit should return to ordinary classes in ordinary schools when their vision and visual habits permit.*

137. A special problem arises in the transfer of children from the residential school. These children, unlike those in local day schools for the partially sighted, will lack experience in associating with sighted children in the learning and activities of ordinary schools. When they return to their own areas, perhaps equipped with a portable lens, they will be asked to join a group of sighted children who have had no experience of having a partially sighted child in class. The situation is one that might be trying to a child accustomed to his fellows in a residential school for the partially sighted. This difficulty would be overcome in part if the headmaster of the residential school sent to the receiving school a full report on the pupil with suggestions showing how the teacher might help in adjusting him to the new situation.

9. Content and Methods of Teaching in the Primary School

138. The main consideration that should be kept in mind in planning curricula and methods for partially sighted pupils at the primary stage is that the visual handicap imposes restriction on methods of teaching reading, spelling, writing and handwork. Various studies have been made of sizes and styles of print appropriate to children of different ages. One of the most notable of these is the Report on the Influence of School Books on Eyesight made to the British

Association in 1913. The report suggested that for normally sighted children up to seven years of age 24 to 30 point type should be used. Many primers and infant readers conform to this requirement. It is generally accepted that the majority of older partially sighted children can read 18 point type without much difficulty, even without a reading lens. It should not be taken for granted that children with high degrees of myopia should read type of this size, but some of them will doubtless be able to do so without injury or strain.

139. By a happy accident the early readers designed for young children can be used by many partially sighted children. In the modern teaching of reading in the early stages frequent use is made of sentences composed by the children and written on the blackboard by the teacher. In these stories, which are usually related to certain persons, certain words recur frequently, and the essence of the method is that through many repetitions in different settings these words begin to be familiar as whole shapes. By this means a vocabulary of look-and-say words is established and these words are employed in the primer. The method can be adopted in teaching reading to the partially sighted. In systems of teaching reading varying use is made of phonetic drill ; in some systems no phonic approach to reading is employed. In general it may be said that reading methods for partially sighted pupils should avoid phonic methods as far as is found practicable. Adult reading does not depend upon attention to the letters in a word, and there is no valid psychological reason for requiring children to make a phonetic analysis of what they read. Difficulties arise at the later stages of reading when size of print for sighted children decreases. For some children the provision of a lens may solve the problem, but for many the only solution is to have books available in 18 point type. The Report on Partially Sighted Children* expressed the hope that publishers might find it possible to produce books in large print and that they might overcome by some means the economic difficulties of a small market. The market is not confined to children in Great Britain ; it extends to every English-speaking country. It might not be found possible to design text-books that would suit different national school systems, but an endeavour might be made to publish in suitable types a few books of general interest that are read by sighted children of all the English-speaking peoples. It may be necessary to subsidise the printing of suitable text-books for partially sighted children.

140. The idea that children should be able to spell correctly every word in the English language has been replaced by the idea that children should be able to spell correctly a number of the most frequently occurring words, including all the words that they are likely to write. Spelling lists based on frequency are in common use in schools for sighted children. Their usefulness in schools for the partially sighted is apparent. They present a ready means of restricting to a minimum the words that ought to be in the writing vocabulary and thus of avoiding unnecessary use of sight in learning to spell.

141. Writing can be simplified by using script throughout school. Partially sighted pupils should not be encouraged to change to cursive writing. The script selected should approximate to the print used in learning to read. The aim in teaching writing should be the attainment of a legible hand using large characters in simple form. Writing should be learned by using the blackboard and white chalk. Thereafter most writing should be done with a broad pencil on large sheets of paper clipped to a slightly tilted desk.

142. Arithmetic presents less difficulty than the language arts. In modern educational practice arithmetic begins by gaining experience with objects in their

* See paragraph 93.

simple number and size relationships. Some of the complicated manipulation of numbers, such as the reduction of complicated fractions by cancelling, is being displaced by more carefully designed practice in the basic number relationships of addition, subtraction, multiplication and division. Frequent use of mental arithmetic and of short methods in solving problems tends towards a reduction in the use of sight in learning arithmetic. Improvements have taken place in the printing of text-books on arithmetic, and pages of badly set microscopic print are no longer encountered in the best of them. It is still common practice for the teacher to make free use of the blackboard in demonstrating new processes, and it is not unusual for problems to be presented to the class by this medium. The inventive teacher should have no serious difficulty in adapting the methods commonly employed to suit the needs of the partially sighted.

143. Partially sighted children, even more than sighted children, rely on speech and hearing rather than on writing and reading as their principal means of communication. Their education must be adapted to improve their skill in these arts, and they should be encouraged to converse freely and to narrate experiences vividly. They should acquire the habit of learning by listening, and for this purpose oral lessons by the teacher and listening to school broadcasting should be encouraged.

144. Handwork that is suitable for blind pupils is often unsuitable for the partially sighted. It should be remembered that if an operation can be accomplished by sight or by touch, partially sighted children will almost always choose the visual in preference to the tactile method. A particular form of handwork should be chosen because it does not involve the use of fine visual discrimination and not because blind people can undertake it by touch. Rug-making is an unsuitable form of handwork because of the demands it makes upon vision. Raffia work is of doubtful value for the same reason. Woodwork may be accepted as a satisfactory form of handwork, but it should not require the interpretation of scale drawings. Most of the plastic crafts such as pottery can be attempted by partially sighted children.

145. We propose no detailed recommendations for the teaching of these subjects, nor do we consider it necessary to discuss the teaching of physical exercises, hygiene, history, geography, music and nature study. To some extent these subjects have to be adapted in content and method for partially sighted children. In general, however, it may be said that the methods and curricula of the primary school meet the needs of partially sighted children with only such adaptations as are required to meet their visual handicap. Teachers experienced in primary school work should have no great difficulty in turning their skill and inventiveness to the problems of the partially sighted. In recent years literature on these subjects has been increasing and it now affords considerable help to the headmaster or teacher who has to plan the education of partially sighted children.*

10. Courses of Study for Older Partially Sighted Pupils

146. The vocational interests of partially sighted children are limited by their visual handicap. For some with static vision or with a prognosis that is not serious certain of the professions are open. There are numerous records in the past of men and women with high degrees of myopia and with other forms of restricted sight who have made important contributions to the arts and the

* Among the most important recent contributions to this literature are *The Report on Partially Sighted Children*, 1934; "The Partially Sighted School"—W. Lightfoot, Chatto and Windus, 1948; "Education and Health of the Partially Seeing Child"—W. Hathaway, Columbia University Press, 1947.

sciences. Academic courses will meet the needs of only a small minority, and those who are to succeed in them will require sight enough to be able to read for reasonable periods without strain or injury. For those who have not the interests or the ability to follow such courses a fair range of opportunity is available, which includes many forms of factory work involving repetitive work such as packing goods in small containers, the tending of simple machines, the distributive trades, operating telephone switchboards, domestic work and French polishing. Few of these occupations require any specific vocational training at school. The needs of those who do not desire academic courses can readily be satisfied by general courses such as are offered to many fully sighted children.

147. Some partially sighted pupils will be able to return to ordinary classes : some will require to continue their education in a special class associated with a school for fully sighted pupils or with the physically handicapped, and some will remain in the residential school for partially sighted children.

148. For the reasons stated in paragraph 145 no specific recommendations are made on courses of study for older partially sighted pupils.

11. Allocations in the Associated Plan

149. Although it has not been necessary to make detailed recommendations about courses of study, their general consideration has implications for organisation in the system of association to which we think it desirable to make reference. Partially sighted children should master the elements of reading, writing, spelling and arithmetic in classes devised for the purpose. They should also have their first lessons in handwork in the special class in order that they may use media appropriate to their visual handicap and have at least one activity of a recreational nature under the guidance of the special teacher. When the elements have been mastered, the more able should spend an increasingly large proportion of their time in classes for sighted children. The less able may require to remain for longer periods in the special room to have tutorial instruction. The effect of this arrangement will be to provide a course of minimal essentials for the less able partially sighted children and an enriched curriculum for the more able ; in this instance the enrichment consists in an approximation to equality of opportunity with fully sighted children. *We therefore recommend that, in the early years of school life, instruction in the subjects of reading, writing, spelling, arithmetic and handwork should be given in the class for partially sighted children, that other subjects should be studied with fully sighted children and that the brighter children should spend an increasingly large proportion of their time in classes for fully sighted children as they grow older.*

12. School Buildings and Classrooms

150. Special care must be taken in planning or selecting school buildings and classrooms for partially sighted pupils. A primary school that is to be used as a centre for these children should be well served by local transport and should, if possible, be a recently erected building with all the advantages of modern school design. Since most of the new school buildings have been located in new housing areas, which are often on the fringe of towns and cities, it may not be possible to meet both criteria of accessibility and recency of construction. Some sacrifice of accessibility should be made in order to gain the advantages of a well designed building. The room or rooms to be chosen for the partially sighted class should be well-lit naturally and artificially. No objection need be made against a southern exposure in Scotland, provided that blinds are available to guard against occasional glare. Arrangements should be made so that the room can be darkened to the

degree necessary to enable an ordinary epidiascope or diascope to be used. Walls and ceilings should be in light shades with a matt surface. The blackboard used by the teacher should be well illuminated and free from reflections. Artificial lighting need not be different from that supplied in well designed, efficiently lit classrooms for fully sighted children. Written work, especially in the early stages, is often done on small individual blackboards attached to desks of the type designed by the London ophthalmologist, Bishop Hannan. It has been suggested that the traditional blackboard should be displaced by a revolving blackcloth with a matt surface on the same principle as the revolving devices that have largely displaced the teacher's blackboard. These could be fitted to the pupils' desks or, alternatively, could be placed round the walls of the room but with adjustments for height and angle. Partially sighted children require large surfaces for their work; their desks must be larger than those in use in ordinary class rooms, and generous provision of storage space is necessary. Classrooms for these children need therefore to be large in proportion to the number of pupils; a classroom suitable for forty fully sighted children would meet the needs of a class of fifteen partially sighted children. *We recommend that schools for the associated plan should be accessible to transport and of recent construction; that classrooms for the partially sighted should be illuminated efficiently with natural and artificial light; that they should be attractively decorated in light colour with a matt surface; that floor space and storage accommodation should be generous; and that large surfaces for writing should be provided either in the form of revolving blackcloths with firm bases and mounted on individual desks or round the walls of the room and adjustable in height and angle.*

13. Special Equipment

151. The practice of providing two pairs of spectacles for each partially sighted child whose sight can be corrected is to be commended. One pair should be kept in the school in reserve, the other should be in regular use. By this arrangement children who forget to bring their spectacles do not lose opportunities of instruction, and delays for replacement after breakages are avoided. Teachers of partially sighted children should see that spectacle lenses are clean and that the frames are adjusted to the eyes.

152. It is to be expected that improvements in the design of reading lenses for partially sighted children will be made within the next few years. Active research is required to plan and test various lenses before any single type can be strongly recommended. Of the two lenses at present available the London Lens is to be preferred because of its mobility.

153. Maps require to be carefully selected. Fortunately some maps now being produced for schools use fairly large type and are not over-burdened with print. Primary school teachers often use sketch maps which they draw on the blackboard and fill in as the lesson proceeds. Such a device should enable many partially sighted children to take part in the study of geography, provided that they are placed in a position where they can see the teacher's drawing and printing without strain.

154. The residential school for the partially sighted children should make use of the talking book as a recreative device and as a teaching aid.

155. Broadcasting has an important part to play in the education of the partially sighted. School broadcasts should be freely used. It is also important that partially sighted children should learn to listen with discrimination to broadcast programmes. The teacher should direct their attention to broadcasts

that they might find attractive in leisure, and these should be discussed as matters of common interest. Broadcasting should take the place of reading or the cinema as the main form of recreative entertainment.

156. Schools for the partially sighted can make use of the episcopes, the diascope and the film strip projector if the illustrative material is well-designed and the apparatus efficient. Under careful conditions some use can be made of moving films, but this medium has limited value for partially sighted children.

157. The use of typewriters is a matter of controversy. It has been maintained that the size of type in the ordinary commercial typewriter is too small for many partially sighted children, and that if training is given in the use of the typewriter some of them may seek clerical employment. Against these views it has been proposed that typewriters using large type should be permitted in schools, and it has been argued that if the partially sighted are to write at all they are less likely to cause eye-strain by using touch-typing than by using pen or pencil. Typewriting is taught in some schools in England for the partially sighted ; it is commonly taught in the United States of America. There are many situations in which ordinary writing is essential for fully sighted and partially sighted children ; handwriting must be the basic form of visual communication. Older children, especially those who desire to follow academic courses, should be given the opportunity of learning to type by touch.

158. Our recommendations for the supply of equipment may be summarised as follows :—

(1) *Partially sighted children whose vision can be corrected should each be supplied with two pairs of spectacles.*

(2) *Research in the design of lenses is required. The London Lens should, meanwhile, be supplied to all children who can profit from its use.*

(3) *Maps clearly designed and printed should be supplied ; they should be supplemented by sketch-maps prepared by the teacher.*

(4) *Broadcasting should be used as a teaching aid. An endeavour should be made to develop discriminating selection of broadcasts for purposes of entertainment during leisure time.*

(5) *Schools should be equipped with episcopes, diasscopes and film-strip projectors.*

(6) *Older pupils, especially those desiring to follow academic courses in secondary schools, should be given the opportunity of learning touch-typewriting. The residential school for the partially sighted should use the talking-book for instruction and entertainment.*

14. Parent-Teacher Co-operation

159. If the partially sighted are to use at home the visual habits learned at school, if it is important that spectacles should receive proper care and be worn at the appropriate times, if nutrition and welfare need special attention, if restrictions have to be imposed on the duration of reading or the size of type, it is necessary that the intelligent interest of parents should be secured. Teachers must be prepared to encourage parents to come to the school at suitable times and see the work that is being done. Careful explanations should be given of the methods of teaching adopted and advice offered on how parents can best assist. It may in appropriate circumstances be advisable to form a parent-teacher association on a small scale, but even if this is not done a strong endeavour must be made to create and sustain parental interest. Parents should attend medical

and ophthalmic examinations in order that they may receive the advice of the medical officer or specialist. *We recommend that parent-teacher co-operation should be promoted in order that effective partnership between home and school may be achieved, and we also recommend that parents should be encouraged to attend medical examinations and thus obtain expert guidance on the health of partially sighted children.*

15. Partially Sighted Children with Additional Handicaps

160. In areas where sufficient numbers of partially sighted children are found it may be possible to have a class for those of them who are physically handicapped, in addition to the proposed class or classes in the primary school. In this situation the children in the former group should attend a school for the physically handicapped and should form a class on the associated plan within the school. Where the numbers are smaller and the only class is one conducted within a primary school, it should be possible for the physically handicapped child in most instances to join the class. He may not be able to share many activities with the fully sighted children in the primary school, but he should be able to receive efficient educational treatment within the small class for the partially sighted.

161. The partially sighted who are also mentally handicapped, and those who are too severely handicapped physically to profit from attendance in a partially sighted class in a primary school, should be regarded as classifiable under the mental or physical handicap and not under the handicap of partial sight. On being sent to the appropriate school due care should be taken to ensure that methods of teaching appropriate to their defective vision are employed. If it is found necessary, special provision for partially sighted children with an additional physical handicap should be made in the proposed residential school for partially sighted children. It is not suggested that mentally handicapped children who are partially sighted should attend this residential school.

162. Recommendations for the education of partially sighted children with additional handicaps may be summarised as follows :—

(1) *In areas where day classes for the partially sighted are available, children with an additional but not too severe physical handicap should attend the classes whether they are conducted in a primary school or in a school for the physically handicapped.*

(2) *Children who are mentally handicapped and those who are severely handicapped physically should attend schools for children with these handicaps, and due care should be taken of their defective vision.*

(3) *Places in the residential school for partially sighted children should be made available, if necessary, for those who have an additional physical handicap that is not too severe, but not for those who are mentally handicapped.*

16. Training of Teachers

163. The two main questions that arise under this head are the changes that may be required in the training of all teachers likely to encounter children who are partially sighted and the type of training that is necessary for those who engage in teaching partially sighted children.

164. The present courses in hygiene in the Training Institutions provide instruction in elementary physiology of the eye and in methods of testing vision. If the proposal is adopted that teachers should undertake the testing of vision to

be used in the first screening of partially sighted children, it will be the duty of the Institution to ensure that all teachers are competent in this work. It is important that those who are to teach in the primary school should be able to use the Snellen test card and the rotating E test. Teachers who attend vacation courses qualifying for the Infant Mistress endorsement should have demonstrations and a brief refresher course in administering simple tests of vision.

165. The work of the Training Institution in presenting the facts of individual differences in ability and achievement with their practical implications deserves commendation. No better way can be found to prepare for the efficient care of handicapped children than to create a generation of teachers who from the commencement of their professional service appreciate that each child is a unique person with his own constellation of aptitudes and interests. A widespread sympathy for handicapped children would prevent the development of the idea that they are merely drags on the educational machine. Some of the administrative problems in the education of partially sighted children would be greatly simplified if all teachers understood their needs.

166. The best preparation for a teacher of partially sighted children is training and experience in teaching ordinary children. No special course of training should be required for those commencing this service, but it would be an advantage if each recruit could be associated with a teacher with experience therein. Training should be provided during service and might take two forms. First, there should be meetings of teachers of the partially sighted, and for this purpose it would be an advantage if they formed an organisation to further their professional interests. Second, there should be vacation courses concerned with their problems and offering expert advice based on successful practice and on the special knowledge of the ophthalmologist and the educational psychologist. It would be an advantage if effective contacts could be established with teachers of partially sighted children in England.

167. *We make the following recommendations :—*

(1) *The Training Institutions should ensure through their courses in hygiene that all teachers are adequately instructed in the administration of simple tests of vision.*

(2) *Vacation courses leading to the Infant Mistress endorsement should give a brief period of instruction in these tests.*

(3) *Training Institutions should deepen the interest of young teachers in all types of handicapped children and especially in those with defective vision.*

(4) *No period of formal training should be required of those desiring to teach partially sighted children. General training and experience with ordinary children should be supplemented by training during service, through meetings of teachers of partially sighted children and through vacation courses and conferences concerned with their problems.*

17. Mobilising Experience

168. The suggested professional organisation of teachers should do much to foster a free exchange of experiences among those engaged in the education of the partially sighted. A further service can be rendered by visits from a trained and sympathetic observer who is well acquainted with the wider field of education and who can see in a steady and proportioned manner the needs of these children in relation to the whole educational service. This function might well be discharged by one of His Majesty's Inspectors of Schools with special interest in the education of handicapped children. Such an officer could assist in the

exchange of information and he could represent to education authorities new and emerging needs in this field of education. He should be in a position to give his undivided attention to the work, and he should therefore have no extraneous duties such as fall, for example, to a district inspector. He should, however, have time to study and to observe the best work that is available, and he should have the fullest understanding of handicapped children. *We recommend the appointment to the post of H.M. Inspector of Schools of a well qualified person to have special concern with the education of handicapped children.*

18. Experiment and Research

169. The education of partially sighted children has not proceeded beyond the early stages of development, and the present need is for experiment and research. New tests of visual acuity for young children are required, and the effects of eye usage on deteriorating vision should be studied afresh. Experiments are needed to determine the minimum size of print that can be used efficiently with varying eye conditions, and unsolved problems remain in the design of reading glasses and other devices for magnification. Sufficient facts have not yet been gathered concerning the intelligence, personality and educational attainments of partially sighted children. An experimental approach to methods of teaching should be made, especially with regard to reading, writing, spelling and arithmetic in their early stages. No finality has been reached in the education of older partially sighted children.

170. Much of the required experimentation can be done only by classroom teachers and it is important that they should interchange experience. The techniques to be employed will often be clinical rather than those applicable to mass research. Some of the work will be capable of measurement by standardised tests ; some will be assessed by no other means than individual judgment.

171. Ophthalmic research related to the school situation is urgently required, and it is hoped that if a residential school for the partially sighted is instituted the opportunity will be taken to promote investigations that may be of value in improving curricula, methods and organisation. Psychological research is also needed, and to this end encouragement should be given to qualified educational psychologists to interest themselves in this field. Some of the educational and psychological topics might be investigated by the Scottish Council for Research in Education.

172. *We recommend that research and experiment should be applied to the educational, ophthalmic and psychological problems of partially sighted children.*

19. Training of Specialists other than Teachers

173. We have dealt fully with this important topic in our Report on Pupils who are Defective in Hearing, and we accordingly refer to the recommendations contained in Chapter 18 of that Report.

SUMMARY OF REPORT

(Specific recommendations are indicated by a line at the side of the paragraph.)

PART I. THE BLIND AND THE PARTIALLY SIGHTED

Chapter 1 : The Nature of the Problem

174. Sympathy is given more readily to the blind than to the deaf. Sight is required for a wide range of human activities and is employed in almost all normal processes of education. (Paragraphs 3-8.)

175. Children with defective vision may be divided into two groups, the blind and the partially sighted. (Paragraphs 9 and 10.)

PART II. THE EDUCATION OF THE BLIND

Chapter 2 : Historical

176. A brief account is given of early developments in the education of the blind. (Paragraphs 11-17.)

Chapter 3 : Ascertainment and Incidence

177. Blind pupils are defined as pupils who have no sight or who have or are expected to have within the period of compulsory schooling insufficient sight to enable them to be educated by methods requiring vision. (Paragraphs 18 and 19.)

178. Educational and occupational definitions of blindness do not require to be coincident. A ruling should be given about the probable status of the individual pupil under the Blind Persons Act a considerable time before the end of his period of attendance at a school for the blind. (Paragraphs 20-22.)

179. The following visual standards should be employed in selecting children for admission to schools for the blind (i) a visual acuity of 6/60 (with correction) or less in the better eye, (ii) other conditions of the eye including deteriorating conditions that might prevent children from being educated efficiently by methods requiring vision. (Paragraph 23.)

180. Although ophthalmic factors are of the highest importance in the ascertainment of blindness other considerations should not be neglected. The criteria of selection for admission to a school for the blind should include degree and nature of vision, health, intelligence, aptitudes, educational attainment, educational needs and interests. (Paragraph 24.)

181. Visually handicapped children who are not diagnosed with certainty as requiring education in a school for the blind should in the first instance attend a school or class for the partially sighted. (Paragraph 25.)

182. The selection of children for admission to a school for the blind should be the duty not of Regional Certifying Clinics for the Blind but of an ascertainment team including a medical officer, a psychologist and a specialist teacher acquainted with the educational opportunities available for children with defective sight. An ophthalmologist should meet with the ascertainment team or submit to the medical officer a full report on each case. The advice of the ophthalmologist should normally be the weightiest factor in ascertainment. (Paragraphs 26 and 27.)

183. Medical officers and teachers should promote as far as possible early ascertainment of blind children and their early admission to schools for the blind. (Paragraphs 28 and 29.)

184. Statistics of enrolment and incidence are presented. Planning should proceed on the assumption that the incidence of blindness in school children should be accepted as approximately 0.25 per 1,000 of the school roll. (Paragraphs 30-32.)

185. Subject to changes in the general birth-rate, any future plan for the education of blind children should be based on the assumption that only a slight decline will occur in their numbers. (Paragraphs 33 and 34.)

Chapter 4 : The Needs and Interests of the Blind

186. While the blind and the sighted have certain common needs, the blind have special needs that must be met by education. The special needs are discussed. (Paragraphs 35-42.)

187. Theories of psychological compensation are described and evaluated. (Paragraphs 43 and 44.)

188. Brief surveys are made of the needs of the blind in terms of their intelligence, emotions, educational attainments and health. (Paragraphs 45-52.)

189. The education of blind children should be based on the assumption that their needs and interests are as varied as those of sighted children. (Paragraph 53.)

Chapter 5 : The Provision of Education for the Blind

190. Reference is made to existing powers and duties relating to the education of handicapped children. (Paragraph 54.)

191. A need exists for information about the education of the blind. The Secretary of State should prepare an illustrated brochure setting forth the opportunities that exist in special schools for the education of handicapped children of all types, and describing in informal terms the obligations of parents and of education authorities to use these opportunities for the benefit of handicapped children. (Paragraph 55.)

192. Various systems of organising the education of the blind are examined and reference is made to the existing local schools. The conclusion is in favour of providing residential education for all blind children in Scotland in the Royal Blind School, Edinburgh. (Paragraphs 56-63.)

193. The number of pupils on the roll of any class for blind children should not exceed 15 and the maximum number on the roll of any nursery school class or infant class or secondary school class should not exceed 10. (Paragraph 64.)

194. Consultations should take place between the Secretary of State and the Minister of Education to ascertain if the Minister and local authorities in the North of England would be prepared to regard the Royal Blind School, Edinburgh, as a regional school serving the requirements for secondary education of blind children in Scotland and in the northern counties of England. (Paragraph 65.)

195. Provision should be made in the residential school for the blind for the enrolment with parental consent of children under five years of age. (Paragraphs 66 and 67.)

196. Nursery and infant departments of the school for the blind should be closely associated. (Paragraph 68.)

197. No fundamental change is required in the general education of older blind children. (Paragraph 69.)

198. No training directed to the mastery of a specific vocation should begin until the pupil has reached sixteen years of age. Throughout any period after sixteen years of age and up to the age of twenty when vocational training is conducted in a school or in any institution offering such training, the general education of the blind should be continued and should include the study of English, current affairs, speech and physical education. (Paragraphs 70 and 71.)

199. The utmost endeavour should be made to provide vocational training after the age of sixteen years for as wide a range of occupations as can be found adjusted to the needs and abilities of the blind and to their opportunities for employment. New forms of work for the blind should be sought as changes occur in industry. (Paragraph 72.)

200. Blind children with the appropriate ability and interests should have opportunities of obtaining a secondary education designed to qualify them for admission to universities and other institutions of higher learning. (Paragraphs 73 and 74.)

201. The Secretary of State in conjunction with the Minister of Education should consider means for ensuring increased grants from public funds to meet the production costs of text-books for blind children and blind students and of books for general reading. (Paragraph 75.)

202. Adequate apparatus and equipment should be provided for the education of the blind. (Paragraph 76.)

203. Blind children who are mentally handicapped should spend a probationary period in a cottage unit attached to a residential school for the blind and, if proved to be capable of profiting from instruction, should receive their education in the cottage unit but with access to educational facilities provided in the residential school for the blind. (Paragraphs 77 and 78.)

204. Children who present serious problems of behaviour should be given a probationary period of training in the cottage unit for the mentally retarded, and they should receive their education either in the cottage unit or in the residential school if they show themselves capable of profiting from schooling. (Paragraph 79.)

205. Children who are totally deaf and totally blind and who show promise of ability to profit from instruction should receive their education at a centre for Great Britain to be decided upon by the Secretary of State and the Minister of Education. (Paragraph 80.)

206. Children who are totally blind but partially deaf should be educated in schools for the blind if they have acquired normal speech, and they should have individual hearing aids if they can profit from their use. (Paragraph 81.)

207. Children who are blind and physically defective should be educated in a residential school for the blind provided that adequate care can be given to their physical disability, that they are capable of profiting from the instruction and that the nature of their disability is not likely to cause alarm or mental strain to other blind children in the school. (Paragraph 82.)

208. Blind teachers should not be responsible for the general education of children under ten years of age. The proportion of blind teachers to seeing teachers in a school for blind children should not exceed 25 per cent. (Paragraph 83.)

209. There are many problems connected with the education of the blind awaiting solution, and experiment and research should be promoted. (Paragraphs 84 and 85.)

210. Teachers of the blind should be encouraged to continue to invent and try new devices for the education of the blind and to continue to seek new methods and better content of courses; they should interest themselves in research; research bearing on the educational problems of the blind should be undertaken by teachers of the blind, the W. R. Ross Foundation and the Scottish Council for Research in Education. (Paragraph 86.)

PART III. THE EDUCATION OF THE PARTIALLY SIGHTED

Chapter 6 : Some of the Problems Involved

211. The need for special educational treatment is discussed and a brief reference is made to some early experiments. (Paragraphs 87 and 88.)

Chapter 7 : Ascertainment and Incidence

212. Children who are not blind but who by reason of visual defect require special educational treatment should be described as partially sighted children. (Paragraph 89.)

213. Teachers should give a simple test of vision to children as soon as they are able to follow the necessary directions and recognise either the letters or the E orientation. As a result of the preliminary tests of vision teachers should report to the school medical officer all children who have a visual efficiency of 6/9 or less in the better eye, after the most complete correction has been obtained, in order that they may have a further examination by an ophthalmologist. (Paragraph 90.)

214. Every education authority should have the services of an ophthalmologist readily available and he should have suitable and well equipped premises for examination and treatment. (Paragraph 91.)

215. The need for special educational treatment of a partially sighted child should be determined by a team based on the child guidance service and including an ophthalmologist, school medical officer, educational psychologist, and the headmaster or teacher from the sending and from the receiving school or class. (Paragraph 92.)

216. The standards for selection of myopes suggested in the Report on Partially Sighted Children should be, in general, accepted. They are summarized in the report in the following terms :—

“ No hard and fast rules can be laid down, but it is desirable to formulate general principles in order to reduce divergences in practice. These principles are :—

I. If the eyes show fundus changes indicative of a serious condition of myopia the child should always be admitted to a special school.

II. In the absence of signs of such fundus changes the child should usually be admitted to a special school if :—

- (a) after repeated examinations it is found that the myopia has been increasing steadily at the rate of more than 1 dioptré per annum ;
- (b) after a period of slow rate of increase or apparent arrest it is found that there is a sudden rise in the rate of progress to more than 1 dioptré per annum.

III. The actual amount of myopia should not be the sole factor in determining whether a child should be sent to a special school.

IV. The age of the child must be taken into account. The younger the child the more serious are factors such as degree of myopia present and the rate of progress of that myopia. In doubtful cases the existence of a history of myopia in the family may be a deciding factor.

V. Children with a visual acuity after correction of 6/24 or worse should be admitted to a special school, though the majority of these will probably fall within category I above."

The criterion of an increase in myopia of approximately 1 dioptre need not be uniformly or rigorously applied. (Paragraphs 93-95.)

217. In the selection of non-myopic children for education by methods appropriate to partially sighted children the critical range of visual acuity after correction should be from 6/24 to over 6/60 in the better eye. (Paragraph 96.)

218. Children who do not come within the categories determined by these criteria should be eligible for admission to schools or classes for the partially sighted on other evidence submitted by an ophthalmologist. (Paragraph 97.)

219. Rates of incidence are reviewed. (Paragraph 98.)

220. The incidence of partially sighted children in Scotland should be provisionally estimated at the conservative rate of 0.75 per thousand of the school roll. (Paragraph 99.)

221. Consideration is given to changes in incidence. No spectacular fall is expected in the incidence of partial sightedness among children. (Paragraph 100.)

222. Parents should readily accept the advice of the school medical officer when he recommends treatment for strabismus. (Paragraph 101.)

223. Tests of colour blindness should be given to children and this information should be made available to pupils before entering upon secondary school courses and to those responsible for vocational guidance. (Paragraph 102.)

Chapter 8 : The Needs and Interests of the Partially Sighted

224. The education of partially sighted children should approximate in methods and content to the education of normal children as closely as the visual handicap will permit without causing serious deterioration of sight. (Paragraph 103.)

225. Education adapted to the needs and interests of children with a wide range of intelligence should be provided for the partially sighted. (Paragraph 104.)

226. Partially sighted children should be encouraged to mix freely with their sighted contemporaries in all activities that are permitted by their visual ability and which involve no serious risk of further impairment of sight. (Paragraph 105.)

227. Educational provision should be made on the assumption that many partially sighted children are capable of reaching and some of surpassing the average educational attainments of sighted children. (Paragraph 106.)

228. Partially sighted children should have general medical examination once per year and ophthalmic examination twice per year and more frequently in special cases. (Paragraph 107.)

229. Partially sighted children should receive adequate physical education under such safeguards as may be required to avoid injury to sight, and they should be encouraged to develop an interest in suitable outdoor activities. (Paragraph 108.)

Chapter 9 : The Provision of Education

230. Controversies centring mainly on myopia exist among ophthalmologists concerning appropriate activities for partially sighted children. The development of reading lenses creates new opportunities for the education of partially sighted children. (Paragraphs 109-112.)

231. In planning the education of partially sighted children it should be assumed that for Scotland as a whole at least three times as many require educational treatment as were provided for in 1947. (Paragraph 113.)

232. Partially sighted children should not attend classes or schools for the blind. (Paragraphs 114 and 115.)

233. Consideration is given to the arguments for the segregation and association of partially sighted children as the main principles of organising their education. (Paragraphs 116-129.)

234. Partially sighted children should not be educated in segregated schools or classes. Classes for partially sighted children may be organised in schools for the physically handicapped and can be so organised with advantage for children who have an additional handicap or who present special conditions of vision including rapid deterioration, or who are slightly retarded in ability or in attainment, but such classes should be so organised that the partially sighted share with sighted handicapped children in appropriate subjects of instruction and school activities. Where segregated schools are abandoned partially sighted children may be educated in a special class or in special classes associated with primary schools. Classes should have a maximum enrolment of fifteen pupils and should not exceed two in number in any primary school. The primary school should be chosen with reference to its location and to the degree of co-operation that may be expected from the headmaster and teachers. Partially sighted children should have the necessary equipment, including lenses, that may be required to enable them to profit from instruction in the special class and in ordinary classes. (Paragraph 130.)

235. In communities or areas that cannot provide a class of ten pupils children should attend a residential school. One residential school should meet the needs of all such children in Scotland. In order to ascertain approximately the number of places to be provided, a sample survey should be made at medical examinations for children of seven years and over in a single year. An estimate should then be made of the numbers of partially sighted children of all ages and education authorities requested to prepare schemes for the education of partially sighted children belonging to their areas. The residential school should be situated in Edinburgh. (Paragraphs 131-134.)

236. The proposed residential school for the partially sighted should not be on the same site nor under the same administration as the Royal Blind School but they should have the services of the same ophthalmologist who would be able to recommend transfers of pupils from one school to the other. (Paragraph 135.)

237. On the approval of an ophthalmologist children who are mentally, physically and educationally fit should return to ordinary classes in ordinary schools when their vision and visual habits permit. (Paragraph 136.)

238. Before a child is returned from the residential school for the partially sighted to a school for fully sighted children in his own locality, a report should be sent to the receiving school with suggestions showing how the pupil might be adjusted to the new situation. (Paragraph 137.)

239. Content and methods of teaching are reviewed. (Paragraphs 138-148.)

240. In the early years of school life instruction in the subjects of reading, writing, spelling, arithmetic and handwork should be given in the class for partially sighted children, other subjects should be studied with fully sighted children and the brighter children should spend an increasingly large proportion of their time in classes for fully sighted children as they grow older. (Paragraph 149.)

241. Schools for the associated plan should be accessible to transport and of recent construction, classrooms for the partially sighted should be illuminated efficiently with natural and artificial light, they should be attractively decorated in light colour with a matt surface, floor space and storage accommodation should be generous, large surfaces for writing should be provided in the form of revolving blackcloths with firm bases and mounted on individual desks or round the walls of the room and adjustable in height and angle. (Paragraph 150.)

242. Partially sighted children whose vision can be corrected should each be supplied with two pairs of spectacles. Research in the design of lenses is required. The London Lens should, meanwhile, be supplied to all children who can profit from its use. Maps clearly designed and printed should be supplied ; they should be supplemented by sketch-maps prepared by the teacher. Broadcasting should be used as a teaching aid. An endeavour should be made to develop discriminating selection of broadcasts for purposes of entertainment during leisure time. Schools should be equipped with episcope, diascopes and film-strip projectors. Older pupils, especially those desiring to follow academic courses in secondary schools should be given the opportunity of learning touch-typewriting. The residential school for the partially sighted should use the talking-book for instruction and entertainment. (Paragraphs 151-158.)

243. Parent-teacher co-operation should be promoted in order that effective partnership between home and school may be achieved, and parents should be encouraged to attend medical examinations and thus obtain expert guidance on the health of partially sighted children. (Paragraph 159.)

244. In areas where day classes for the partially sighted are available children with an additional but not too severe physical handicap should attend the classes whether they are conducted in a primary school or in a school for the physically handicapped. Children who are mentally handicapped and those who are severely handicapped physically should attend schools for children with these handicaps and due care should be taken of their defective vision. Places in the residential school for partially sighted children should be made available, if necessary, for those who have an additional physical handicap that is not too severe, but not for those who are mentally handicapped. (Paragraphs 160-162.)

245. The Training Institutions should ensure through their courses in hygiene that all teachers are adequately instructed in the administration of simple tests of vision. Vacation courses leading to the Infant Mistress endorsement should give a brief period of instruction in these tests. Training Institutions should deepen the interest of young teachers in all types of handicapped children and especially in those with defective vision. No period of formal training should be required of those desiring to teach partially sighted children. General training and experience with ordinary children should be supplemented by training during

APPENDIX

SOURCES OF EVIDENCE

A. List of Bodies and Individuals who gave oral evidence, submitted memoranda or letters or otherwise assisted the Council

College of Teachers of the Blind (Scottish Branch).
 National Institute of the Blind.
 National League of the Blind (Scottish District Council).
 Scottish National Federation for the Welfare of the Blind.
 W. R. Ross Foundation.
 London County Council, Special Services Branch.

Anderson, Major C. H. W. G., T.D., F.R.S.E., The Royal Blind School, Edinburgh.
 Brown, Dr G. Arbuckle, Glasgow.
 Graham, C. W., Esq., M.B., F.R.C.S.E., Edinburgh.
 Linklater, G. J. I., Esq., O.B.E., O.St.J., T.D., M.D., Edinburgh.
 Lumsden, J., Esq., H.M. Staff Inspector, Ministry of Education.
 Ritchie, J. M., Esq., O.B.E., Ph.D., The Royal London Society for Teaching and Training the Blind.
 Rodger, A. G., Esq., O.B.E., Scottish Education Department.
 School Ophthalmic Surgeons, Lanarkshire Education Authority.

B. List of Schools Visited

SCOTLAND

Edinburgh	...	...	Lauriston Special School.
„	...	...	The Royal Blind School.
Glasgow	...	...	Albany Special School.
„	...	...	St Vincent Roman Catholic School.
Lanarkshire	...	...	Tollcross Roman Catholic School.
„	...	...	Dalton Special School, Blantyre.
Renfrewshire	...	...	Laighpark School, Paisley.

ENGLAND

London	...	...	Hazeldene Road School for the Partially Sighted, Sydenham.
„	...	...	John Ruskin School for the Partially Sighted, Camberwell.
„	...	...	Linden Lodge School for the Blind, Wandsworth.
„	...	...	North House, Wimbledon.
Berkshire	...	...	Barclay School for Partially Sighted Girls, Sunninghill.
Buckinghamshire	...	...	Dorton House School for the Blind, Dorton.
Hertfordshire	Chorleywood College for Girls, Rickmansworth.
Middlesex	Sunshine Nursery School, Northwood.

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